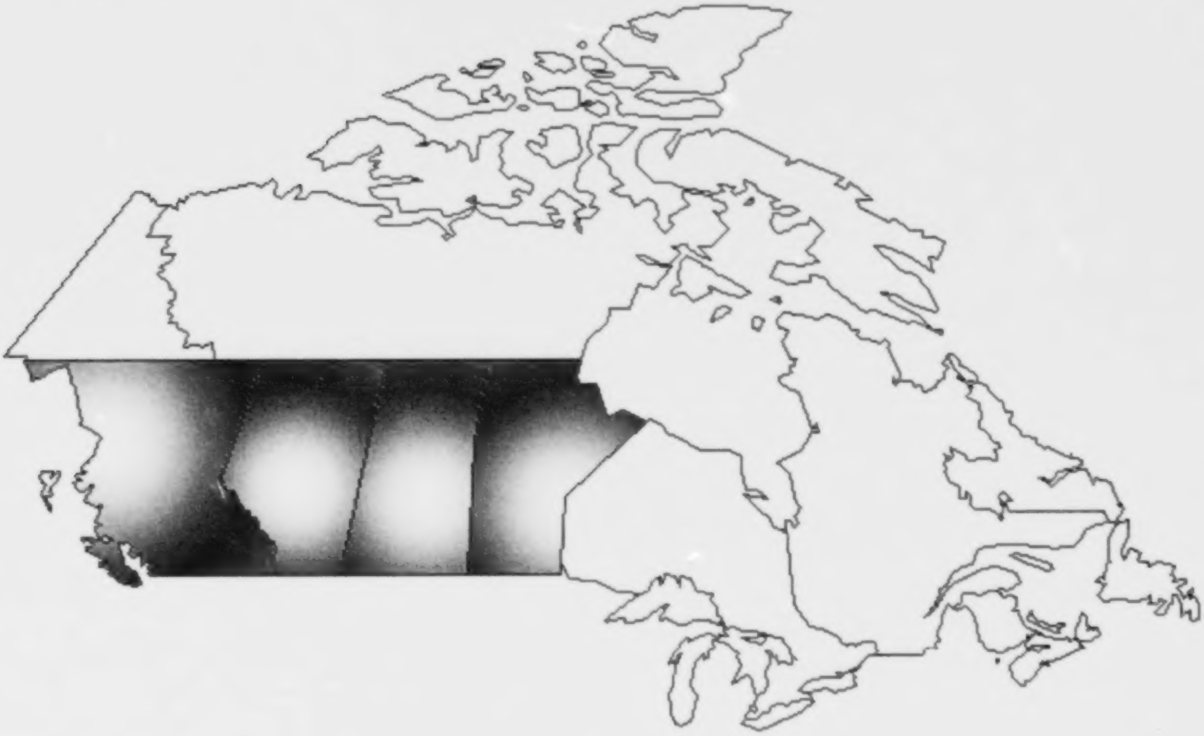
Saskatchewan
Highways and
Transportation

Highway Construction
Policies and Practices in Western Canada



Engineering Standards Branch
Construction & Contracts Section
November 2004

Table of Contents

1.0 Introduction 1

2.0 Survey Questions and Responses 3

1. Contract 4
   - 1.1 Alternative contracts (design/build/operate) 4
   - 1.2 EPS contracts 7
   - 1.3 Warranty clauses 10
   - 1.4 Bid qualifications (COR, etc.) 12
   - 1.5 Consultants 15
   - 1.6 Quality and quantity control by contractor 17
   - 1.7 Quantity control of surfacing material 18
   - 1.8 Independent truck haul 20
   - 1.9 Municipal roads 24
   - 1.10 Fuel rebates 26
   - 1.11 Time completion 28
   - 1.12 Roadway deficiencies 30
   - 1.13 Third party claims 31
   - 1.14 Dispute resolution 33
   - 1.15 Tarps 35

2. Material 36
   - 2.1 Aggregate sources 36
   - 2.2 Material purchase and procurement 37
   - 2.3 Subgrade stabilization 39
   - 2.4 Seal coats 40
   - 2.5 AC anti-stripping agents 44

3. Safety & Environment 45
   - 3.1 Environmental manual 45
   - 3.2 Spill controls 46
   - 3.3 Emission controls 47
   - 3.4 Night construction 49
   - 3.5 Pilot vehicles 50
   - 3.6 Certifications for field employees 51

4. Human Resources 52
   - 4.1 Typical project staffing levels and engineering percentages 52

4.2 Overtime control 56
4.3 Travel and sustenance policy 57
4.4 Workplace diversity and employment equity 59

5. Innovations 61

5.1 Electronic tendering 61
5.2 Alternative surface treatments 62
5.3 Communication devices 65
5.4 Survey equipment and software 66
5.5 Web cameras 68

6. Contact Information 69

6.1 Government contacts 69
6.2 Government websites 70

List of Appendices

Appendix A. **Saskatchewan Highways and Transportation Specifications**

A-1 Road checker and Scale person Training Manual
A-2 Minimum Haul Rate Enforcement Agreement (MHREA)
A-3 Third party claims

Appendix B. **Alberta Transportation Specifications**

B-1 Draft Report on Automated Truck Haul

Appendix C. **British Columbia Ministry of Transportation Specifications**

C-1 Design Build Major Project (RFP - General Conditions)
C-2 Minor Works (General Conditions)
C-3 Major Works (General Conditions)
C-4 Condition of Tender
C-5 Build BC Act Appendix BC21

Note: Appendices are not included with all report copies. Contact Engineering Standards Branch, Construction & Contracts Section (see page 69) for appendix information.

1.0 Introduction

The purpose of this report is to give a better understanding and awareness of the current construction policies and practices of the Western Canadian Provincial Highways and Transportation Departments. The questionnaire was developed by the Construction and Contracts Team staff of Saskatchewan Highways and Transportation. The questionnaire explores in detail the handling of contracts, materials, safety, environment, human resources and innovation issues. The complete questionnaire and Saskatchewan's responses were sent to Alberta, B.C. and Manitoba for a response. A half day teleconference was held with each province to allow a more in depth look into the above topics and current developments.

Saskatchewan Highways and Transportation Engineering Standards Branch (ESB) staff involved in the teleconferences were Allan Widger, Executive Director; Richard Flaman, Director of Construction & Contracts; Paul Rachar, Construction Engineer; Allan Folkersen, Construction Standards & Safety Supervisor; and Anita Kung, Engineering Intern.

On July 15, 2004, a half day teleconference was held in the morning with representatives of Alberta Transportation and Saskatchewan Highways and Transportation. Participants from Alberta included Jim Gavin, Roadway Construction Standards Specialist; Don Snider, Manager of Transportation Projects; and Allan Donovan, Manager Consultant Compliance and Performance.

On July 16, 2004, a half day teleconference was held in the morning with representatives of British Columbia Ministry of Transportation and Saskatchewan Highways and Transportation. Participants from British Columbia included Don Shaw, Provincial Construction Manager; and Barry Bergstrom, Manager of Field Services.

On Aug 4, 2004, a half day teleconference was held in the morning with representatives of Manitoba Highways and Saskatchewan Highways and Transportation. Participants from Manitoba included Ron Weatherburn, Contract Engineer; Les Whiklo, Contract Technician; Tim Klaasen, Manager of Specialty Crew Operations; and Bob Kuz, Senior Quality Assurance Technician.

2.0 Survey Questions and Responses

1. Contract

1.1 Do you use different types of contracts such as design/build/operate? If so, describe the types of contracts that you have experience with.

Saskatchewan

The department does not tender design/build/operate contracts.

Alberta

Yes, a Design/Built/Finance/Operate model is being investigated on the South East leg of the Anthony Henday Drive. A RFP was used to select three consortiums based upon demonstration of financial capability and the proposed design method. Final selection will be based upon low bid tender. Payment is based on completion of construction and annual operation including penalties for substandard pavement performance and maintenance level of service.

Examples:

- East Leg of Anthony Henday Drive, (14 km plus 6 interchanges, Ring road around Edmonton) is a P3 initiative (Design/Built/Finance/Operate, DBFO) for 30 years to be awarded this fall, subject to Alberta Treasury Board approval. Contact Neill McQuay at 780-415-1076 for more information.
- Two other large contracts ($30M+) were tendered for the contractor to select option A (Asphalt Concrete Pavement - EPS) or B (Portland Cement Concrete Pavement - EPS) or C (Design/Build/Maintain for 30 years). One contract went Option A, the other went Option B.

British Columbia

Yes, Design/Build has been in use since 1989: 10 projects ranging from $6 million to $10 million. All Design/Build contracts are open to any interested party, followed up on some projects by a shortlisting process.

Design/Build is divided into 2 categories:

- Major (Request For Expression of Interest (RFEI)/ Request for Proposal (RFP) based, generally > $6 million, with soft side evaluation e.g. local economic initiatives, local hires and quality management plan).
  - They are evaluated using short listing, subjective analysis, and a point scoring system. Life cycle cost is also taken into consideration in the points scoring system (converted to price using a set formula).
  - See Appendix C-1 for an example of an RFP.
- Minor (100% tender based, < $3 million, price only evaluation, low risk projects) See http://www.th.gov.bc.ca/Publications/const_maint/contract_serv/const_files/DesignBuildStdSpecsVol-1Jul20-04.pdf section 119 for Design Build Minor General Conditions.

DBFO is new to the Ministry, but we will start 3 large scale projects this year. The Sea to Sky Highway ($600 million), Hwy #1 Park Bridge in Kickinghorse Canyon ($130 million) and Okanagan Lake Bridge ($100 million).

Manitoba

The department generally does not tender design/build/operate contracts. The Department is contemplating design/build contracts for select bridge construction projects, due to staffing cutbacks.

1.1.1 What are your department's successes and difficulties with alternative contracts?

Saskatchewan

Not applicable.

Alberta

Little experience but so far so good.

British Columbia

Generally successful. Difficulties arose in 3 projects within the same year, dealing with political and geotechnical issues. Major claims will develop when Design/Build Contractors have difficulty with Quality Management (QM) systems. Recently there was public backlash with respect to the concessionaire model for the Coquihalla.

Manitoba

Not applicable.

1.2 Do you use End Product Specification (EPS) contracts and if so, what types of contracts are EPS (i.e. paving, grading and granular surfacing). What percent of the total construction contracts are EPS?

Saskatchewan

Approximately 40% of the paving and granular surfacing contracts tendered from 1987 to 2002 were EPS. The department has not tender EPS contracts for the past 2 years and does not intend to in the foreseeable future.

Alberta

All paving and granular base course is EPS, no grading EPS. Alberta does not construct sealed granular surfaces.

See http://www.trans.gov.ab.ca/Content/doctype245/production/Specs2003.pdf section 3.5 - 3.6 for EPS specifications of Asphalt Concrete Pavement and Granular Base Course.

British Columbia

EPS is used in paving and seal coating contracts. For paving contracts there are 6 pay adjustment factors (asphalt cement content, gradation, density, smoothness, segregation and application rate). For small paving contracts (< 5000 t), smoothness, segregation and application rates are waived.

Manitoba

The department does not normally tender EPS contracts, but have tendered a micro-surfacing EPS contract (similar to Saskatchewan's) on a trial basis the last three years. We may have to consider EPS in the future depending on staff levels available.

1.2.1 Describe the degree to which the EPS contracts are a true EPS as opposed to method specification.

Saskatchewan

The department's EPS contracts continued to have some method based specifications. Presently, the department's conventional paving contracts have incorporated some EPS concepts (e.g. pay adjustment factors for ride, density, surface defects, etc.).

Alberta

Very little method type stipulations. For example the contractor is required to use a paver to pave the entrances and approaches as opposed to using a grader.

British Columbia

The specifications are mostly true EPS with a few milestones, such as Revised Marshall Design and Reviewed Quality Plan.

Manitoba

Currently the Department has a Method based specification with no EPS concepts. Although recently we have been tendering micro-surfacing on a trial basis. This is a true EPS specification and contract.

1.2.2 Describe your successes and difficulties with EPS.

Saskatchewan

EPS did not meet the department's expectations. It was politically difficult to enforce the severe penalty on EPS contracts due to the small size companies involved and the small number of contractors in the industry. Some contractors only strived to meet minimum properties on EPS contracts, thereby affecting overall project quality. It was difficult to reject product since the contractor would look for any excuse possible to point at least some of the blame on the department.

Alberta

Quite successful. EPS pay adjustments have resulted in less segregation, improved densities, contractor ingenuity, etc. We presently have a 1-year warranty but are looking at an extended warranty, in which case we may back off on Q/A testing, mix criteria, etc. (next step in EPS evolution).

We had some problems with poor workmanship. Some contractors can become very defensive when there are problems. Sometimes they are not quite operating to what we think is "good practice" but we have to step back and base acceptance on the end product rules. For example – our EPS has no temperature limitations for paving and every fall we get calls about whether the contractor should be allowed to go or not. The compaction pay adjustment and reject levels usually take care of this.

No one wants to reject marginal materials or work unless it's black and white. Independent consultants provide the test results and contractors can appeal, in which case they pay the test costs unless the new results are out of penalty.

British Columbia

EPS has been used for about 7 years and is a great success. Some contractors are earning 100% of the bonus and some are now sharing the bonuses with their crew which has helped improve the quality of their work.

Some issues have arose with respect to Quality Management and there are some "gray area" enforcement issues (e.g. if in the reject zone, does that mean rip out and replace, zero payment, or substantially reduced payment, etc.). The gray area beyond the penalty can be negotiated for solutions, based on the value of product in place versus getting it up to the standards. It all depends on the degree and nature of the problem.

Manitoba

Micro-surfacing is our only EPS contract. It has given us a perspective on administering that type of contract. Regional staff had difficulty in enforcing penalties and also it was difficult to stay out of the process as staff are used to the hands on approach of the Method specification.

1.3 What type of warranty clauses, if any, do you use?

Saskatchewan

Generally only contracts in which the contractor has full control over the work and materials have warranty clauses. The department only has three standard contracts that have warranty clauses. They are as follows:

- Rubber asphalt crack seal (90 days)

The contractor shall promptly correct defects or deficiencies in the work which appear within 90 days from the date on which the work is completed. The engineer will give the contractor written notice of defects and deficiencies. If the contractor fails to do the repairs promptly to the satisfaction of the engineer, the engineer may arrange to have the repairs done, the cost of which shall be paid by the contractor to the department.

- Micro-surfacing (1 year)

The contractor shall promptly correct defects or deficiencies in the work which appear within 1 year from the date on which the work is completed. The engineer will give the contractor written notice of defects and deficiencies. If the contractor fails to do the repairs promptly to the satisfaction of the engineer, the engineer may arrange to have the repairs done, the cost of which shall be paid by the contractor to the department.

- Bituminous Mix (90 days)

The department retains a holdback of 10% for a period of 90 days after completion of the last stockpile for warranty purposes. Department staff will check for dry aggregate, aggregate not completely coated and liquid asphalt not sticking to the aggregate or where overheating has caused excessive oxidation. At the completion of the 90 day warranty period any monies owing the contractor, less any deductions, will be released.

Alberta

Warranty is covered through the 50% performance bond for all defects related to workmanship and materials. Cold weather paving and late season construction are allowed.

- Bridges (2 years)
- Paving (1 year)
- Grading (no real warranty except for seeding)
- Seal coating (1 year) is not EPS, therefore it depends fully on warranty. Examples of defects could include delamination strips, bleeding within the wheel paths and washboarding.

See http://www.trans.gov.ab.ca/Content/doctype245/production/Specs2003.pdf for General Specifications (section 1.2.9 for security and section 1.2.54 for contractor's warranty and final acceptance and section 3.24 for Chip Seal Coat Specification).

British Columbia

All contracts over $50,000 have warranties. The warranties are generally not very effective because problems can often be attributed to issues beyond the contractor's control (difficult to enforce).

- Conventional & EPS (1 year warranty)
- DB (2 year warranty, due to limited control of project)

See Appendix C-2 for Minor Works GC 13.04 and Appendix C-3 for Major Works GC 36.00 and http://www.th.gov.bc.ca/Publications/const_maint/contract_serv/const_files/DesignBuildStdSpecsVol-1Jul20-04.pdf section 119 GC 43.00 in Design Build Minor Contracts.

Manitoba

All bonded contracts with the department (generally $75,000 & up) require the low bidder to provide a Performance Bond equal to 50% of the contract value. The Performance Bond remains in full force and virtue for at least one year after the date on which the final payment was made. Any specialized projects requiring warrantees in excess of one year are written into the Special Provisions with a "notwithstanding" clause. Corrective measures prior to final acceptance of the work are handled by way of a standard General Conditions clause.

The department has only been able to successfully apply the Performance Bond in full to one contract (must be clean cut). Sometimes application of the Performance Bond is negotiable, as was the case at Brandon last year with clay balls due to loading at the plant. We are not sure that the cost of the Performance Bond (approx. 0.7 % of contract amount, similar to Saskatchewan's Indemnity Bond) is worthwhile. The contractors will almost always correct the work themselves instead of affecting the bond.

For non-bonded tenders (< $75,000), Manitoba uses the holdback funds (15%) to correct any deficiencies showing up within 40 days after acceptance of the work. The Contractor's responsibility ends at this time when all the money is paid out.

The department also requires a Labour and Material Payment Bond of 50%.

1.4 Qualifications needed to bid on contracts.

1.4.1 Do you require bidders to have a Certificate of Recognition (COR) for Occupational Health and Safety (OH&S) and if so, describe the policy?

Saskatchewan

Yes, a contractor must have a COR to be able to bid on contracts with a value of $100,000 or greater ($200,000 in the Northern Administrative District). For contracts less then $100,000 the contractor is required to complete an OH&S questionnaire indicating details of his/her company's safety program and it must meet the required OH&S acts and regulations. There is presently no policy on COR requirements for subcontractors. The following policies are under review and recommendations have been made:

- Contractors will need COR for bidding on Northern Administration District contracts with a value of $100,000 or greater (same as southern contracts).
- Subcontractors will need COR for work with a value of $100,000 or greater.
- Contractors and subcontractors will need a Small Business COR for jobs between $50,000 and $100,000.
- Independent truckers will be required to complete a Trucking Safety Certificate Program in lieu of a Small Business COR.

Alberta

Yes. ACSA (not affiliated with Alberta Roadbuilders) administers the COR program. For more information, contact Doug Ramer 780-415-1088. See http://www.trans.gov.ab.ca/Content/doctype245/production/Specs2003.pdf section 1.2.5.2 for more information on safety pre-qualification.

British Columbia

No. The Roadbuilders and WCB are looking into a COR program (industry initiative). Currently, a pre-tender meeting is required for DB minor works, which usually involves small or new DB contractors. BC is okay with a joint venture being represented at this pre-tender meeting.

If there are any violations by the contractor of the any of the "14 Deadly sins," the department gets written up by WCB. They will fight WCB, arguing that they have done everything they could to minimize any violations and are usually successful, but the Ministry will accept blame when deserved.

Pre-qualifications for bridge construction and paving contracts were eliminated two years ago because it had met its needs (awareness of OH&S requirements).

Manitoba

Currently, the Department requires bidders on all tenders to complete and submit a Workplace Safety & Health Compliance Questionnaire with their tender package. Completion of this questionnaire is mandatory prior to being awarded any contract. As of January 1, 2005, the following changes are planned:

- On tenders in excess of $250,000, all bidders will require COR or an equivalent (may be lowered to $100,000 for 2006)
- On tenders valued under $250,000, all bidders will require COR or equivalent or completion of the Workplace Safety & Health Compliance Questionnaire to the satisfaction of the Department.

We are looking at making the COR requirement at time of award (not tender closing). The Manitoba Building Association (MBA) would be the registering agency for trades and the Manitoba Heavy Construction Association for Roadbuilders with Manitoba Labour signing off. There is some concern regarding COR requirements for northern contracts.

The Department doesn't recognize sub-contractors, but our General Conditions state that the Prime Contractor is responsible for ensuring any sub-contractor hired has adequate insurance and complies with the Acts & Regulations.

1.4.2 Do you require other qualifications for bidders and if so, what are they?

Saskatchewan

No, but the Minister has the right to reject any tender if the Minister is of the opinion that the bidder lacks the experience, equipment, qualifications or ability to successfully perform the work that will be required. The Minister's decision is final.

Alberta

Yes. These are "soft" qualifications based on financial competency, etc. There is no pre-qualified or banned list, but first time contractors may be interviewed on their understanding of the work required. Disqualifying contractors is politically difficult to enforce.

See http://www.trans.gov.ab.ca/Content/doctype245/production/Specs2003.pdf section 1.2.4 for disqualification, 1.2.5 for competency, 1.2.7 for bid deposit and 1.2.9 for security.

British Columbia

Bonding only. The Conditions of Tender entitle us to inquire as to the Bidder's capacity to perform and to reject the Tender of any non-responsive Bidder. We do not maintain a list of qualified contractors. In some rare cases we have allowed an unqualified bidder to walk away without bid bond penalty where it was felt that forcing the contractor to do the work was a bigger problem or risk than it was worth to the province. See Appendix C-4 Condition of Tender 14.1 for more information.

Manitoba

Similar to Saskatchewan (No).

1.5 Do you commission the supervision of construction contracts to consultants and if so, what is the approximate percentage?

Saskatchewan

Yes. Once the department has exhausted its available staff, the supervision of contracts is commissioned to consultants. This policy results in approximately 40% of contracts being commissioned to consultants.

Alberta

100% of project level design and construction administration has been outsourced to pre-qualified consultants since 1996. Regional staff oversee and accept the consultant's work and evaluate the consultant for use on future commissions. The consultants have errors and omissions insurance for true errors (not judgement) such as an under-designed pavement, but this is rarely invoked.

British Columbia

Yes – once available staff are exhausted. About 25% - 50% of construction supervision is outsourced to consultants. The department down sized in 2001 from 270 to 105 staff, due to expected reduced budgets. Since then the budget has been increased to $6.5 Billion over 3 years. We are over-stressing the consultant industry similar to Saskatchewan (mostly ex-Ministry staff).

Manitoba

Very limited experience (almost none). Currently, one large bridge and road construction project in Northern Manitoba is being supervised by consultants. The Department is reaching the point with reduced staff compliments that we may begin hiring consultants to supervise construction projects more often. Manitoba Roadbuilders would prefer to work with department staff.

1.5.1 What level of authority is given to the consultant?

Saskatchewan

Officially the consultant provides a second level supervisor who is given the same level of authority as the Regional Construction Engineer (i.e. may approve all changes up to the AVL). In practice the consultant reports to the Project Manager ($50,000 change limit) or Regional Construction Engineer.

Alberta

Most of the day-to-day decisions are left to the consultant. Big picture decisions are referred to the Department (can be a gray area). We changed the words "the Engineer" in our specifications to "the Consultant" or "the Department" to reflect this level of authority. The department uses a Contract Administration Manual to divide up the roles and responsibilities.

We have struggled for several years with the roles and responsibilities of consultants. The consultant's signing level for extra work is $10,000 compared to $20,000 for the Project Sponsors (equivalent to Saskatchewan's Regional Construction Engineers) and $50,000 for the four Regional Directors.

See the following link http://www.trans.gov.ab.ca/Content/doctype34/production/adminmanual.pdf for Alberta Transportation's Contract Administration Manual.

British Columbia

Same as Ministry except cannot initialize additional spending above contract award amount. In practice they are expected to consult with experienced Ministry staff on most contract interpretation questions, at least until such time as they demonstrate equivalent knowledge. The consultant has $0 financial authority and cannot make any decisions to dollar value dealing with changes outside the contract. This is partially addressed by including a Provisional Sum (a cash allowance item) in the contract for "Site Modifications" which even a consultant Ministry Representative is able to spend.

Manitoba

Still in trial stage, only one job has been done. For this project, the consultant reported to the project manager who reported to the Director of Bridges and Structures.

1.6 Do you have the contractor do quantity and/or quality control?

Saskatchewan

No.

Alberta

Yes and Yes.

British Columbia

Yes and Yes.

Quality Control is a core element in all construction contracts over $50,000, implemented using about 10 pages of Special Provisions. See Item 1.17 in the following linked document: http://www.th.gov.bc.ca/publications/const_maint/contract_serv/const_files/12a-SpecProvMajorWorks.doc

The department pays to the design "neat-line" quantities on surfacing and checks thicknesses for under-builds. Contractors have to build overruns into their bids. This encourages good overrun control by the contractor.

Have had limited exposure to Contractor quantity control. When supported with adequate technology and post-audit capability, it has proven successful. General reluctance to do this routinely.

Grading is tendered in-place (no haul quantity calculations required).

Manitoba

No

1.7 *Describe your process for field quantity control of surfacing materials.*

Saskatchewan

The department employs a roadwork checker and scale person to control the quantity of surface material. Research is currently being done to try to automate the quantity control of surfacing materials. The project supervisor ensures that the weigh scale has been certified. The scaleperson makes a list of the trucks and their corresponding tare weights. The scaleperson weighs each truck and with either a mechanical ticket machine or the Highway Construction Information System (HCIS) software creates a weight ticket which is given to the trucker. The roadwork checker marks and records the start and end locations of the dump on the road and retrieves the weight ticket from the trucker. For granular material, the checker calculates the spread distance and measures spread distance using a measuring wheel. See Appendix A-1 for Road Checker and Scale Operator Training Manual.

Alberta

Same as Saskatchewan for the most part. The scale person and road checker are hired by the consultant. There is no set data base program in use. We are piloting an Automated Truck Haul System with Truck Base Corp. of Edmonton where the haul data is automatically collected at the plant and on the road using different technologies – computer, global satellite, wireless, handheld PDAs, GPS and central severer hosting technologies all together. An Automatic Truck Haul System paper on this project is attached in Appendix B-1.

100% of the weight scale information is electronically captured. There will be 3 more pilot projects this year with some modifications.

Alberta looked at RFID technology 10 years ago but there were cost problems with outfitting truckers (costs have since dropped dramatically) and problems with data collection on the road (i.e. reading distance). A road checker will always be needed for load verification. They can however stay in the ditch and use radio communications with the trucker if necessary.

British Columbia

We pay "neat line" quantities for new surfacing contracts. This eliminates the need for a scaleperson.

For rebuilds of existing roads, actual quantities are measured and paid for. Paving quantities are paid on a weight basis supplemented with measured quantities. Asphalt mix is weight based with an EPS pay adjustment factor applied for application rate, based on pulls tracked by the Contractor. Automated scales are required.

Manitoba

Similar to Saskatchewan (the department employs a roadwork checker and scale person to control the quantity of surface material). The department is not looking into changing the process. We feel we get good publicity by hiring local students. All trucks have back-up alarms and the contractor supplies a "dump man" for base course.

1.7.1 Describe the equipment and software used in a typical field control operation.

Saskatchewan

The scale person generally reads the weight information from the platform scale readout and enters it into a multi-part ticket dispenser. The same information is entered manually into a spreadsheet or a Corvallis Micro Technology (CMT). Both scale person and road checker use the CMT handheld computer to store the information and later transfer it into the Highway Construction Information System (HCIS) program, which is an in-house developed DOS based system for keeping track of weight quantities. For some hot-mix operations a digital ticket is printed out from the silo scale without the need of a scale person. Research for new technologies is currently being done.

Alberta

Currently the scale person and road checker record the haul information manually which is then entered manually into a spreadsheet program.

British Columbia

The contractor must use an automated weigh scale. The roadman takes the tickets and the screed man probes for depths.

Manitoba

All work is done manually using paper reports and a calculator.

1.8 *Do you have a clause in your contracts that requires the contractor to hire independent truckers?*

Saskatchewan

Yes, the department has a mandatory clause in its contracts that requires the contractor to hire independent truckers under the Minimum Haul Rate Enforcement Agreement (MHREA) between the department and the Saskatchewan Trucking Association (STA). See Appendix A-2 for MHREA.

Alberta

No. However, contractors mostly rely on private trucking companies. There is a definite move towards bigger trucks (combinations and tridems) as well as belly dumps and material transfer machines.

British Columbia

Not explicitly, although there are the "Conditions of Equipment" that encourage hiring local equipment. These are very soft (where practical).

See Appendix C-3 GC 11.00 and http://www.th.gov.bc.ca/Publications/const_maint/contract_serv/const_files/DesignBuildStdSpecsVol-1Jul20-04.pdf section 119 and 145.30.03 for more information.

Manitoba

No, but if an independent trucker is hired, the Prime Contractor is expected to pay the Manitoba Minimum Truck Haul Rate. No formal monitoring is done as to whether or not the minimum rates have been paid by the Prime.

1.8.1 What are the exceptions to the department's policy?

Saskatchewan

The MHREA does not apply to the following types of contracts:

- Contracts where the total summer haul (Apr 1 to Oct 31 of any year) will be < 500,000 t.km
- Seal coat contracts
- Grading contracts
- Micro-surfacing
- Carryover of less than 50,000 t.km after March 31
- Contracts starting after October 31 and ending prior to April 1 (winter haul)

Alberta

Not applicable.

British Columbia

Not applicable.

Manitoba

Not applicable.

1.8.2 If applicable, what is the mandatory percentage of independent haul, if any?

Saskatchewan

The contractor must subcontract to independent truckers no less then 40% of the estimated haul quantity, which is measured in tonne-kilometres or cubic metre-kilometres. The contractor is not paid for the portion short of the mandatory 40% unless they can provide a statutory declaration that they made the necessary contact with STA and were unable to get sufficient independent truckers.

Alberta

Not applicable.

British Columbia

Not applicable.

Manitoba

Not applicable.

1.8.3 If applicable, what are the minimum haul and loading rates?

Saskatchewan (November 2000 to present)

Material	Haul Distance (km)	Loading Fee (/t)	Hauling Fee (/t.km)
Asphalt Concrete	0 to 10 km	$ 0.81 / t	$0.143
Asphalt Concrete	> 10 km	$ 0.68 / t	$0.143
All Other Materials	0 to 12 km	$ 0.59 / t	$0.143
All Other Materials	12.1 to 20 km	$ 0.41 / t	$0.138
All Other Materials	> 20 km	$ 0.00 / t	$0.133

Note: A surcharge from 15% to 35% is applied in Northern Saskatchewan. Rates are currently under review.

Alberta

Not applicable.

British Columbia

Not applicable.

Manitoba (November 1985 version)

Haul Distance	Material Measured In Tonnes	Material Measured In Cubic Metres
Base rate	$0.46/t plus	$0.82/m³ plus
0 to 20 km	$0.09/t.km	$0.16/m³.km
20 to 40 km	$0.08/t.km	$0.142/m³.km
> 40 km	$0.065/t.km	$0.116/m³.km

Note: These rates are currently under review and may increase about 5 to 10%. Trucking companies have indicated that an 8-9% increase would be acceptable.

1.9 Do you require a formal agreement with urban/rural municipalities for concentrated hauls on their roads? If so, how do you compensate a municipality for the use of haul roads?

Saskatchewan

Yes, the department requires a formal agreement but only with rural municipalities (not urban). The rural municipality can choose between the following two types of Municipal Haul Road Agreements:

- The hauler (contractor) maintains and restores the haul roads.
- The hauler (contractor) pays the municipality an amount (per payload t.km) for the cost of maintaining and restoring haul roads.

The department pays the rural municipalities in both cases for shortening the lifespan of the road (Capital Road Loss). The following rates are currently under review:

Subject	Rate or Surcharge
Cost to Contractor when R.M. maintains its own roads, March 16 to November 14 (summer haul).	\$ 0.0157 / t.km or \$ 0.0279 / m^3, but not less than \$60/km
Cost to Contractor when R.M. maintains its own roads, November 15 to March 15 (winter haul).	\$ 0.00785 / t.km or \$ 0.01395 / m^3, but not less than \$30/km
Capital Road Loss, March 16 to November 14 (summer haul).	\$ 0.0134 / t.km or \$ 0.0239 / m^3
Capital Road Loss, November 15 to March 15 (winter haul).	\$ 0.0067 / t.km or \$ 0.01195 / m^3
Dust Treatment	Bid price or Extra Work

Note: The above applies to department supplied aggregate sources. Where the contractor elects to use a private source, he/she pays all haul road costs.

Alberta

No. It is the Contractor's responsibly to maintain and provide dust control. Rural Municipalities have the authority to stop/prevent haul. Most commodities are "in-place" and the supply of aggregate is a bid item on surfacing jobs.

See http://www.trans.gov.ab.ca/Content/doctype245/production/Specs2003.pdf section 4.5 for Hauling Specification - "contractor has to obtain authority."

British Columbia

No. The government expects free use of all public roads in exchange for transfer funds. The municipalities are starting to lobby the government not to use their roads for detour routes.

Manitoba

No. The department does not pay capital road loss to the municipalities. All the onus is put on the Contractor as far as arranging agreements for hauling along various municipal roadways. Some municipalities have standing agreements with individual contractors whereby an annual fee is paid by the contractor to compensate for the loss of road life. The department will act as a referee between the contractor and the RM (some RM's have been unreasonable).

Our general procedure is that prior to commencing hauling, the Contractor arranges for a 3 person inspection of haul roads to be used. The inspection is made by representatives of the Contractor, the Engineer and the Municipality. Notes are kept on the condition of each km. At the completion of the project and prior to releasing any holdback funds, the Department requires a re-inspection of the haul roads and a formal release stating that all haul roads have been left in satisfactory condition. At least 2 of the 3 parties must be satisfied with the condition of the haul roads.

1.10 Do you have a fuel rebate policy in your contracts and if so, describe the policy?

Saskatchewan (List of claims considered for rebates)

Yes, the department has a fuel rebate policy for unforeseen fuel cost changes.

Price increases due to **tax changes** for propane, bunker fuel, gasoline or diesel fuel are refundable with the following conditions:

- Fuel used in trucks will not be considered as part of the claim.
- Only price increases announced after the date of tender closing will be considered.
- Claims with a value of less than $500 will not be paid.
- Claims or a letter of intent to claim must be submitted within 90 days of final acceptance.
- Claims will only be considered if the contractor provides documentation on the total quantity of fuel purchased along with a summary of fuel which was used in equipment other than trucks.

Price increases or decreases in the **refinery price of propane only** with the following conditions:

- The claim for rebate shall be limited to actual construction equipment, excluding trucks, housing and camp facilities.
- Only price increases or decreases announced after the date of tender closing will be considered.
- Claims with a value of less than $500 will not be paid.
- The propane base price will be stated in the special provisions of the contract.
- The contractor shall provide a statutory declaration indicating the total amount of propane used and copies of the propane invoices, prior to the department making final payment.
- If the delivered price of propane exceeds the propane base price, the department will rebate 75% of the increased cost of propane.
- If the delivered price of propane is less than the propane base price, the contractor shall rebate 75% of the decreased cost of propane (normally never happens).

Alberta

None.

British Columbia

Any price increases due to tax changes announced after the date of tender closing are compensable. It is up to the contractor to submit a claim up to 90 days after the completion certificate is issued. Generally most don't claim as the cost of preparing is more than the compensation.

Manitoba

The department implemented this concept on a limited basis for several multi-year contracts involving hourly work. (e.g. 2 & 3 year terms for mowing & snowplow). It was found that bidders were building in their own price hedge against fuel increases by bidding higher prices in the 2nd & 3rd years.

The Department has since adopted an internal policy as follows:

- Eliminate multi-year contracts for hourly work (especially 3-year terms) if at all possible.
- Eliminate any reference in the Special Provisions to "Fuel Cost Adjustments"
- Review on a case-by-case basis whether a fuel cost adjustment is justified (this would pertain to carry over projects that were tendered late in the construction season or very large scope projects requiring more than one construction season to complete).

1.11 How do you "penalize/reward" contractors with regard to time completion?

Saskatchewan

If the contractor fails to complete the work by the **specified completion date** and/or number of **working days**, liquidated damages are charged. The following rates are generally specified for liquidated damages:

Type of Contracts	Standard (Rate/Day)	High Profile (Rate/Day)
Bituminous Mix	$300.00	-
Crushing	$300.00 - $500.00	-
Sealing	$300.00	-
Grading	$400.00	$1,000.00
Paving	$400.00 -$600.00	$1,000.00
Grading & Paving	$600.00	$1,000.00
Micro – Surfacing	$1,000.00	-

The number of working days and/or contract span can be increased by the ratio of the final value: tendered value of the contracts, and for extensive poor weather, etc. In addition to the liquidated damages, a substantial bonus or penalty clause is often applied on high profile projects (e.g. twining Highway No. 1).

This year the department is conducting a pilot project for a site occupancy clause which would replace working days. The department sets the rate per day in the tender and the contractor bids the number of days it will take to complete the contract. If the contractor finishes before the stated number of days he/she will receive a bonus. If the contractor takes longer than the stated number of days he/she will pay a penalty to the department.

Along with site occupancy, the department is introducing a lump sum penalty of between $10,000 and $20,000 for unplanned carry-over.

Alberta

Alberta uses Site Occupancy and completion dates in its contracts (no bonus/penalty). Liquated damages are applied for work completed after the specified completion date at the rate of $1350 per day or $300 per day if only minor cleanup. We have been considering higher liquidated damages and no allowance for bad weather on a very few select projects where it is important to have the work completed on-time. Many contractors stockpile jobs and build in the liquidated damages.

For late season tenders (August/ Sept.) a special provision is often included which states there will be no Site Occupancy days charged in the current year. This encourages an early start. 50% of tenders for next year's program are out by Christmas, due to Alberta's commitment to road builders. The department has a 3 year program and a 1 year budget (contact Sal Hasham, Director of Programming for more information).

See http://www.trans.gov.ab.ca/Content/doctype245/production/Specs2003.pdf section 1.2.19 for Adjustment of Contract Completion Date, section 1.2.20 for Failure to Complete On Time and section 1.2.21 for Duration of Work and Site Occupancy.

British Columbia

All contracts follow a Standard Rate for Liquidated Damages (see table below), except for paving contracts which use a Site Occupancy clause. For Site Occupancy, the contractor bids the number of days at $2,500 per day. A penalty is applied for failing to complete the work by the specified completion date. A bonus is given for early completion. The daily rates were discussed at a Joint Sector meeting between the Ministry and the BC Road Builder's and Heavy Construction Association and mutually agreed upon.

The department has bonus/penalty language available for high profile projects, typically related to traffic management to help minimize traffic disturbance. For example, for a high volume construction area (busy bridges with a lane closure) this could result in $5000 for a 15 minute delay. Also, milestone projects (e.g. Olympics) have an absolute completion date/ no extensions.

Contract Price Greater than	To and including	Amount Payable per calendar day
$0	$500,000	$300
$500,000	$1,000,000	$500
$1,000,000	$2,000,000	$750
$2,000,000	$5,000,000	$1,200
$5,000,000	$10,000,000	$1,500
$10,000,000		$2,000
<$1M $1000	1-10 M $2500	>10 M $3500

Rates have been updated as per GC 33.02 in Appendix C-3 Major Works.

Manitoba

If the contractor fails to complete the work by the specified completion date and/or number of working days, liquidated damages are charged. The number of working days and/or contract span can be increased by the ratio of the final value divided by the tendered value of the contracts, and for extensive poor weather, etc.

Only bridge work is by completion dates. Almost all other contracts are by working days.

Standard Rates for Liquidated Damages:

Type of Contract	Rate/Day
Grading (< 150,000 m^3)	$ 750
Grading (150,000 – 400,000 m^3)	$ 900
Grading (> 400,000 m^3)	$1,050
Base & AST (< 50,000t)	$ 900
Base & AST (> 50,000t)	$1,050
Bituminous (< 20,000 t)	$1,050
Bituminous (> 20,000 t)	$1,350
Concrete (small – non-main lane)	$1,500
Concrete (large – main lane)	$1,800
Stockpile Aggregate (< 50,000 t)	$ 450
Stockpile Aggregate (> 50,000 t)	$ 600
Jacking Culverts	$ 450

Rates are under review and may increase.

1.12 What is your process for ensuring contractors correct roadway deficiencies on contract completion in a timely manner?

Saskatchewan

The engineer at project completion will advise the contractor in writing as to the defects, if any. If the deficiencies are not rectified within a reasonable time period (generally 30 to 60 days) the department will hire another contractor (at the original contractor's expense) to repair the deficiencies. The department will continue to count working days until the final acceptance of road surface, side slopes and approaches.

Alberta

Warranty starts upon the date of Construction Completion. If deficiencies are present the contractor is given a letter listing the deficiencies and a date that the repairs must be completed by. If completed by that date the Construction Completion Certificate is then back dated to the date when construction was completed. If repairs are not completed, then the project is not accepted and the hold back is not released. The contractor wants to quickly complete his repairs in order to get the warranty clock started and stopped sooner.

Joint interim inspections are sometimes held at approximately 80% completion. The contractor tells the consultant when he is ready for final acceptance. The consultant may give the contractor a dated conditional Construction Completion Certificate if only minor clean-up is required. Approximately 6 weeks are usually allowed for clean up with some discretion in late season.

British Columbia

Same as Saskatchewan, except the department also charges for our direct expenses in lieu of additional days. Deficiencies identified prior to the Completion Certificate must be addressed before the contract ends. Defects identified afterwards are repaired under Warranty, primarily based on good-will by contractor. Bonds remain in force for entire warranty period.

Manitoba

Similar to Saskatchewan. Notice of "substantial completion" is given to the contractor (no working days are counted for trimming).

1.13 What is your policy with regard to the handling of surety and liability related third party claims?

Saskatchewan

The claim is investigated to confirm that the work was correctly identified under contract or that the incident occurred at a location under the contractor's control. The claims are then forwarded to the contractor and an acknowledgement letter is sent to the claimant. The contractor is fully liable within the work limits of the project.

Surety claims are normally covered by the contractor's 50 % indemnity bond. The equivalent funds are withheld from the final payment for a period of 90 days after which the surety will be requested to take action to resolve the issue. The department receives very few surety related claims.

Liability claims are normally covered by the contractor's liability insurance. Equivalent funds are withheld from the final payment until the claim is confirmed, resolved or one year after approval of the final estimate after which the funds will be released to the contractor. It is up to the claimant to negotiate a settlement with the contractor or take whatever actions of law that are available. Copies of liability claims correspondence greater than $1,000 will be forwarded to the liability insurance company.

See Appendix A-3 for more information on 3rd party claims.

Alberta

Third Party claims are directed to the contractor to be handled. The Department has an information brochure that is sent to all claimants. The Department also uses the services of an independent adjuster to decide on claims of less than $1500.

A 50% Labour and Materials bond is also required. The contractor must inform the department if he's received a claim.

See http://www.trans.gov.ab.ca/Content/doctype245/production/Specs2003.pdf section 1.2.42 for Due Care, Claim Settlement and Hold Harmless.

British Columbia

Liability Claims are forwarded to the contractor and no funds are withheld. Surety claims are forwarded to the contractor with a copy to the Surety company. A Labour and Materials payment bond is also required.

Funds are withheld from final payment until the claim is resolved with consent from the surety. Contractors are required to identity all outstanding claims at contract clearance (statutory declaration).

Manitoba

The claim is investigated to confirm that the work was correctly identified under contract or that the incident occurred at a location under the contractor's control. The claims are then forwarded to the contractor and an acknowledgement letter is sent to the claimant.

- Claims at the 1st level of sub-contracting are covered under the Prime Contractor's Labour & Material Payment Bond. This bond is in the amount of 50% of the Contractor's bid price. The claimant can file against this bond if no payment is received within 90 of having done the work. The claimant has 30 days to file a claim after the 90 day period.

- Claims below the 1st level of sub-contracting (sub of a sub, etc.) are dealt with through the holdback funds. If the department has a claim on file from a lower level sub-contractor, no holdback monies are released until notification is received that the claim has been mutually resolved (this assumes that the claim has been filed within 40 days after project acceptance as all holdback is released after 40 days of project acceptance). If, 4 months after completion of the work, the Department is unable to finalize the contract because of outstanding claims, the Department may turn the file over to a trustee for settlement.

- Liability 3rd party claims are the sole responsibility of the Prime Contractor & their liability insurance policy. It is up to the claimant to negotiate a settlement with the Contractor up to and including court action.

1.14 *What dispute resolution mechanism do you use for settling contractor claims against the contract?*

Saskatchewan

The contractor will notify the Project Manager in writing and preferably before performing the work that he/she wishes to negotiate for additional compensation. The Project Manager will keep records during the construction of the disputed work. Reports and recommendations on any claims are forwarded to the Regional Construction Engineer for review and approval
If the contractor is not satisfied with the department's initial decision, he/she will give written notice to the Project Manager of his intention to appeal the decision. The appeal will be in writing to the department and will contain appropriate supporting evidence. The department will give its decision to the contractor in writing.

Depending on the circumstances of the claim (complexity, value, relative positions) the department and contractor may be able to negotiate a settlement themselves or through an independent mediator. Due to the preference of our Crown Solicitor, the department rarely chooses arbitration for settling disputes and prefers settlement through court action.

Alberta

Claims are to be reviewed and handled in the following order:

1. Consultant
2. AT Regional Director if not satisfactorily handled at level 1
3. Executive Director, Program Management Branch if not satisfactorily handled at level 2

A formal Dispute Resolution Process (DRP) can also be applied if the contractor is not satisfied with the level 3 decision. The DRP involves outside assistance to mediate or arbitrate. Recently the department is going more towards arbitration and mediation than through the courts.

See http://www.trans.gov.ab.ca/Content/doctype245/production/Specs2003.pdf section 1.2.55 for Claims and Dispute Resolution.

British Columbia

The following steps are taken:

1. Notice by the contractor
2. On Site resolution
3. If (2) does not resolve, full written claim to Construction Manager
4. If (3) does not resolve, Appeal to Deputy Minister
5. If (4) does not resolve, Binding Arbitration

BC prefers binding arbitration (less adversarial than courts). The door is open for mediation even though this is not part of our formal process. The department tried the "joint panel" approach, but the roadbuilders didn't want this since grey issues can be looked at in different ways with incoming biases. For major Design Build projects include a referee at a set rate per hour is used rather than an in-house process. Generally Contractors choose not to appoint a referee until a dispute arises.

See Appendix C-2 and C-3 for Minor GC 16 – GC 17; Major GC 58 – GC 61 for more details.

Manitoba

The Section Head will investigate and respond to the claim in writing within 7 days of receipt, with copies to the Director responsible for the project and the Executive Director of Construction and Maintenance. If the claim is considered invalid, the reason(s) will be outlined in the response. If the claim is deemed valid but the Department doesn't agree with the requested compensation, a meeting will be set up to determine fair compensation (Quality Assurance Section will participate in this meeting in an advisory capacity).

The Contractor may appeal the decision of the Section Head to the Director responsible for the project. The Director shall respond within 7 days. The Contractor may request the Executive Director of Construction & Maintenance review the decision made by the Director responsible for the project. In the event that the dispute or claim cannot be resolved by the Executive Director of Construction & Maintenance, the dispute or claim may, with the consent of both the Contractor and Department, be forwarded to binding arbitration. Any decision of the arbitrator will be final and binding & not subject to appeal.

In practice, we generally don't go to binding arbitration. Even for court settlement there has only been one case in the last 14 years. These cases are mostly limited to bridge contracts.

1.15 What are your requirements for trucks to use tarps?

Saskatchewan

Trucks hauling granular materials are not required to use tarps. Trucks hauling asphalt concrete must be equipped with tarps in case they are needed.

Alberta

Granular materials are not required to be tarped. Bituminous materials require tarps for every load unless approved otherwise by the consultant.

British Columbia

Insulating tarps are required at all times for hot mix asphalt haul, and for haul over 1 km for cold mix. Granular aggregates are not required to be tarped.

Manitoba

Unless hauling bituminous material only within the project, all loads are tarped with a mesh cover.

2. Material

2.1 Do you secure and provide aggregate sources for use by the contractor? If so, what are your methods for the location of potential aggregate sources?

Saskatchewan

Yes, in most cases the department supplies the aggregate sources. The department uses traditional air photography/landform analysis and airborne/handheld electromagnetic surveys which are verified by field testing.

Alberta

Yes, however the department still allows the contractor the option to provide their own source to the project. In some instances, the department may not offer a source for the project. The department uses traditional air photograph, contour mapping and consultant research projects, which include backhoe testing. The department usually pays the contractor 75 cents to $1.00 /tonne for aggregate obtained from a non-Department source.

See http://www.trans.gov.ab.ca/Content/doctype245/production/Specs2003.pdf section 5.2 for the Supply of aggregate specification. All commodities are in place and majority of jobs have option pit and a bonus of ~$1/t will be added.

British Columbia

Private pits provide 100% of the aggregate source in the lower mainland and government pits provide 95% of the aggregate source for the other areas. In virtually all cases where the Ministry has a suitable pit in the area we offer it. There are about 3000 proven Ministry owned pits. BC is fortunate in that we can piggy-back on the mining industry to help find aggregate sources.

Manitoba

Except in northern areas near aboriginal reserves, the onus is on the Contractor to secure the source of aggregate. The Department generally does not supply the aggregate sources. The Department does own some limited sources which are available to the contractors to use on Transportation Government Services (TGS) projects. The Department has a database of all aggregate sources which we maintain. There is also an inventory and exploration function. This is managed by our Materials Engineering Branch, which has had an increased function the last couple years.

2.2 *Do you use a central government/private agency for procuring materials and what types of materials are purchased through the central agency (e.g. asphalt cement, culverts, gravel)?*

Saskatchewan

Yes, Saskatchewan Property Management Corporation (SPMC) is used for all purchases over $5,000.

Alberta

No. Contractor supplies all materials. Years ago the department supplied asphalt materials.

British Columbia

No. The contractor supplies all materials. However, this has been on and off with asphalt material over the years. Currently the Ministry only supplies electrical materials and anchor-bolt cages for large information/guide sign structures. Those materials are purchased in bulk through the Purchasing Commission, but we are likely getting out of this business as well.

Manitoba

Purchases under $2,500 can be purchased by Regional supervisors with procurement cards. The Department's Contract Section has its own Procurement Officer for purchasing materials. All materials for construction & maintenance (oils, cements, culverts, chemicals, erosion control blankets, geotextiles, etc.) are handled in-house by Rene Nolette. Manitoba had a central purchasing agency until 1995, but the service was not good. The new process is working well and roadbuilders are quite satisfied.

2.2.1 If you do not use a central agency, describe the processes for procurement?

Saskatchewan

Not applicable.

Alberta

Not applicable.

British Columbia

Contractor usually does the purchasing, if not, the Ministry will purchase.

Manitoba

The Procurement Officer issues a "Materials Tender" for the product. The Material Tender is faxed out to our known suppliers based on past bidding history. The tender is also posted on the MERX system for approximately one week.

Once the tender closes, bids are received and checked in the same manner as a construction tender, and results are faxed to all bidders. An approval record recommending the successful supplier is signed by the ADM (usually within one day). Once approval is received, a purchase order is sent out in the mail to the low bidder.

2.3 *What types of subgrade stabilization do you use and describe your experience?*

Saskatchewan

In April of 2002, the department and Pavement Scientific International (PSI) signed a five-year Road Strengthening Research and Development Agreement that will result in a minimum of 350 km of Saskatchewan Highways constructed using PSI technology by 2007. PSI receives payment from the department on a per project basis for the material, technology and engineering services.

This road construction procedure involves mixing existing subgrade soils with PSI's proprietary mixture consisting of cement, fly ash, kiln dust and other additives. During the process, PSICem material is blended with the existing surface, granular material, and subgrade material. This blended layer is then watered and compacted. Usually 80 mm of base course is placed over the strengthened subgrade with a sealed dust free surface. Occasionally the seal is placed directly on the subgrade. Initial observations are that the process has merit.

The department has incurred problems in 2004 with obtaining sufficient and timely supply of PSICem materials.

Alberta

No real subgrade stabilization is used. Lime is sometimes used by the contractor for drying wet clays; however that is at his option and expense. The department has a "Recognized Product List" for new products and processes. Products are categorized by a committee as "potential", "trial" or "proven" and these are available on the website.

Contact Roger Skirrow at 780-427-5578 or see http://www.trans.gov.ab.ca/Content/docType241/Production/recognized%20products%20mnl.pdf for more information on the Recognized Products List.

British Columbia

None. The department has experimented with many different stabilization materials and methods, with limited success. Test program in Ft. St. John area in 1998. Tested for Peace River.

Manitoba

The Department has used both lime and cement to stabilize subgrades. Although lime is still used as a drying agent we no longer do lime stabilization. Lime stabilization had been used extensively in the Red River Valley (vicinity of Winnipeg) especially on the subgrade works for PTH 75 which links Winnipeg to the U.S. border.

It was found that the lime stabilization caused problems with the concrete pavement causing it to heave and move substantially. Cement stabilization has been used in the past as a base stabilization technique but has not been used for a number of years. The department is using more geotextiles in weak areas, and even continuously on some jobs.

2.4 *What types of seal coats do you use (e.g. graded aggregate vs. chip seal)? Describe your successes and difficulties with seal coats.*

Saskatchewan

Generally the department uses a graded aggregate seal coat. In an area of high traffic, a polymer modified HF emulsion is used.

The department recently went through a time period in which a number of seals failed. As a result, the department changed some of its specifications, such as increasing prime curing times, extending the period between application of successive seals, tightening up the temperature specification and better use of pilot vehicles to control traffic speed. The result has been no major seal coat failures for the 2002 to 2004 construction seasons.

Alberta

Most of our seal treatments are chip seal coats using cationic emulsion asphalt. Graded aggregate seal coats are used on highways with AADT less than 500 vpd. Seal coat treatments are generally good however there are always some problems with chip loss near the centre-line, areas of bleeding near intersections and black seals if the contractor got caught in the rain. The biggest problem is loose chips and damage claims. The specified use of pilot vehicles since 1999 has helped in that regard.

British Columbia

Graded Aggregate. These are EPS contracts with warranty. Chip seals are not used anymore.

Seal coats are generally successful, with some problems associated with stripping and inadequate base. Most significant problems relate to traffic management during and immediately after application. Dust control and broken windshields are significant issues. This is a cost effective means of first-time hard surfacing on low volume roads and for extending life on asphalt pavements.

Manitoba

The Department uses graded aggregate only. All seal coating of existing roadways is done by department crews except the contractors sometime seal their own granular surfaces under construction. In 2001, we experienced seal failures. As a result we changed the seal coat operation as follows:

- Adopted seal coat inspectors for Quality Assurance.
- Adopted the "McLeod Method" to determine application rates based on the existing surface condition, traffic volume and aggregate size (available from the Minnesota Seal Coat handbook at http://www.mrr.dot.state.mn.us/research/MnROAD_Project/restools/sealcoat.asp).

Typical application rates are 1.5 -1.6 l/m^2 and 16 kg/m^2. Polymer emulsions are used for > 1,500 to 2,000 AADT. Steel and rubber rollers are used on our seal coats; however, we're probably the only jurisdiction to use steel rollers and they don't work well on some surfaces.

For prime coats, SS-1 is always incorporated in the top 50 mm of the base course instead of a surface application of MC 30. We generally use 10 l/t of granular and 14 l/t of limestone quarry material. 1/4 to 1/3 of the quantity is applied as a surface flush.

2.4.1 What traffic volumes do you allow seals coats on?

Saskatchewan

A double sealed granular surface is generally used in the following areas:

- New construction < 1200 AADT
- Surface rehabilitation < 900AADT

A 35 mm AC mat may replace the double seal coat where heavy truck traffic is involved.

The department also applies seal coats to protect paved surfaces at any traffic level, but is using more micro-surfacing recently on high volume highways.

Alberta

No limitations in terms of traffic volumes. We spend $4 million on seal coats per year at an approximate cost of $2.00/m^2.

British Columbia

Up to about 10,000 vpd and sometimes higher (seals on top of an existing pavement). They are not used for the Lower Mainland and Lower Vancouver Island.

Seals on top of a granular base are usually used for < 1500 traffic volume. The initial seal coat is a double seal with either a 3rd seal or sometimes a paved surface applied a few years later (after repairs if required).

Manitoba

All roads in Manitoba including the TransCanada. We will do double seals on new base construction in consecutive years.

2.4.2 *Do you use adhesion agents for seal coats? If so, what has been your experience?*

Saskatchewan

Yes. If the stripping potential improves by about 30% with the incorporation of the adhesive agent, then we order the emulsion with the adhesive agent already added to it. The experience has been very good in the sense that it provides the aggregate with additional adhesion during the breaking and setting periods.

Alberta

No. However this would be up to the contractor to add (see question 1.3 on warrantee clauses).

British Columbia

Depends on the area of the Province and the pit (mostly up north). Anti-strip is commonly specified. Most adhesion agents are added by the supplier.

Manitoba

We use anti-stripping agents on high volume roads and roads that service recreational areas such as provincial parks. We find that anti-stripping agents reduce stone loss significantly. Aggregate samples are sent to the supplier for testing prior to seal coating.

2.5 *Do you use an anti-stripping agent in your asphalt concrete? If so, what type of anti-stripping agent is used and what is the allowable specification for the stripping potential level?*

Saskatchewan

Yes, if the stripping potential is greater than 20% without anti-stripping agent, then anti-stripping agent is incorporated. The department uses either a liquid (Redicote or Adhere) or lime as anti-stripping agents. Lime is the agent of choice unless it makes the mix too tight. Liquid component is added at 0.5% to 1.0% by weight of the asphalt binder. The lime is generally added at 1% by dry weight of the aggregate.

Alberta

No, very rarely used. On one Superpave project the contractor used a little Redicote as his mix design was failing the AASHTO T283 Test - Resistance of Compacted Bituminous Mixture to Moisture Induced Damage. We can't think of any stripping failures. We have more problems with mat pop outs and clay balls (e.g. Hwy 1E of Calgary).

British Columbia

Yes. Only liquid anti-strip is used (no lime).
Redicote is used predominantly, but sometimes Adhere is used.

Manitoba

Generally the Department does not use an anti-stripping agent in the asphalt concrete. We do add to all our mixes, APA5 (DOWCORNING 3000) which is a moisture releasing agent. The rate would be 1 litre/ 20,000 litres (mixed in the tank of the truck). APA5 costs around $700/U.S. gallon. 1 oz dilutes to 1 gallon for use. We've had no stripping problem in over 30 years since using this material (only problem is with granite surface).

3 Safety & Environment

3.1 Do you have an Environmental Manual?

Saskatchewan

The department has an Erosion & Sediment Control Manual.

Alberta

The following manuals are available on our website or by contacting Don Ramer:

- Design Guidelines for Erosion and Sediment Control for Highways.
- Field Guide for Erosion and Sediment Control for Highways.
- Fish Habitat Manual
- Alberta Transportation Guide to Reclaiming Borrow Excavation Used for Road Construction
- Alberta Transportation Post-Disturbance Reclamation Criteria and Assessment
- Procedures for Borrow Excavation
- Alberta Transportation Pre-Disturbance Assessment Procedures for Borrow Excavation for Road Construction
- Environmental Construction Operations Plan (ECO Plan) Framework (for contractors to submit their environmental plan)

See the following link http://www.trans.gov.ab.ca/Content/doctype245/production/eco5.pdf for Environmental Construction Operations Plan (ECO Plan) Framework. Contact Don Snider for more information about the ECO plan.

British Columbia

Yes. Manual of Control of Erosion and Shallow Slope Movement. Standard Specifications 165. Other information at MoT's Environmental webpage:
http://www.th.gov.bc.ca/mot_org/hwyeng/environmenthome.htm

Manitoba

The Department has two Erosion and Sediment Control manuals. One is very comprehensive. The second is a basic manual intended to be used by field personnel. See Randy Pitz (Manager of Engineering Audit and Quality Assurance) for more information.

3.2 What spill controls do you require in construction contracts?

Saskatchewan

We ensure the contractor cleans up all camp, plant and aggregate sites of refuse and imperishable materials in a neat satisfactory and presentable condition, appropriate to the surrounding landscape and according to all local and provincial environmental regulations.

We ensure the contractor, when in or near streams or other bodies of water, does not discharge or release any substance that may affect the quality of water or cause water pollution.
The department is required to ensure that all provincial and federal regulations are followed.

Alberta

All this is covered in the Environmental Construction Operations Plan (ECO Plan) Framework document. Basically the contractor submits his ECO plan prior to construction with the details on how he intends to address all environmental issues.

British Columbia

Same as Saskatchewan. We require the contractor to provide environmental plan for spill response which requires AIP from BC Environment.

We generally anticipate that Contractors will, as part of their Environmental Plan, provide equipment with spill kits on board when working in sensitive areas. Equipment within watercourses must use biodegradable hydraulic oil.

Manitoba

Similar to Saskatchewan.

3.3 What emission controls are required by you with regards to asphalt plants and construction vehicles?

Saskatchewan

The contractors are responsible for obtaining the required permits (Class I or Class II) from Saskatchewan Environment for asphalt mix plants.

Class I:

- Particulate matter from the dryer exhaust does not exceed a concentration of 0.50 grams per standard cubic meter.
- The opacity (cloudiness) of dryer stack emissions does not exceed 20%.
- Fugitive emissions of particulate matter are insignificant.

Class II:

- Any plant that does not meet Class I requirements.
- Class II asphalt plants may only be operated at locations that follow the isolation distances as outlined in the table below. Prior approval of each new location for Class II asphalt plants is not required. However, it is the responsibility of the asphalt plant operators to ensure that the requirements of the guidelines are met.

No special emission controls are needed for construction vehicles.

REQUIRED ISOLATION DISTANCE	
Location	**Distance**
Cities	4.8 km
Town, Villages, Hamlets	1.5 km
Recreational Parks	3.0 km
Any Residence or Business	1.0 km

Alberta

Contractors follow the Alberta Environment document Code of Practice for Asphalt Paving Plants. Nothing for construction vehicles.

With joint funding projects (e.g. SHIP) the federal government wants us to increase our enforcement of emissions to follow B.C.'s stringent requirements. Instituted new monitoring program.

British Columbia

The contractor requires permits from the Ministry of Lands, Water, Air and Park. There are very high emissions controls on the lower mainland and southern interior. For example, emulsions only (no cutbacks) are used for prime coat except during fringe weather.

Manitoba

The Department requires contractors to follow the guidelines set out by Manitoba Environment for Temporary Asphalt plants. Recently for SHIP and Prairie Grain Road funded projects we have required contractors to use emission controls on their plants (scrubbers or bag house). There is no measurement of the exhaust, only inspection to make sure they are connected, operational and functioning. This will become a more frequent requirement over the next couple of years, especially for all federally funded projects. One R.M. actually prohibited all asphalt plants for a couple years.

3.4 Does the province permit night construction on the roadway? If so, what additional precautions are required with night construction?

Saskatchewan

Only on new location where there is no disruption (e.g. noise, light) to adjacent dwellings. The contractor must supply adequate lighting for worker safety. For all other projects, the contractor may start roadwork ½ hour before sunrise and must stop roadwork at sunset.

Alberta

No, generally not allowed except for twinning. In a 2004 contract on a busy commuter highway near Edmonton the option was given for the Contractor to work at night. Requirements were outlined for extra lighting, but these were very onerous and the contractor worked in the day instead. No separate payment for night time traffic accommodation was provided.

British Columbia

Yes. As per Traffic Control Manual, most construction in the lower mainland is done at night time. The contractor still needs to provide a traffic management plan. Specific provisions are currently under review, as a result of a significant increase in night work and the number of incidences occurring on those projects.

For site occupancy, 24 hours still equals only one day.

Manitoba

Similar to Saskatchewan. We have had limited experience with this. This normally is only a question on bridge projects. All requests to work at night are handled on a project basis.

3.5 What is your policy with regard to the use of pilot vehicles?

Saskatchewan

Pilot vehicles are required for seal coating during daylight hours until the first sweeping is completed. This may be extended to include night time for high volume highways (engineer's discretion).

Pilot vehicles may be used instead of centreline delineation for paving 2-lane highways when one lane is closed. Also a pilot vehicle or flag persons with radio communications are required for Micro-surfacing and Rubber Asphalt Crack Seal contracts.

Alberta

Pilot vehicles are required on all seal coat projects during spreading and brooming activities when the posted speed limit is 50 km/hr or greater.

Pilot vehicles are also used on two-lane paving projects depending upon traffic conditions (no set policy in that regard). It is the contractor's option, but pilot vehicles are becoming standard.

For more information, see Alberta's Traffic Accommodation in Work Zones Manual at www.trans.gov.ab.ca/Content/doctype233/production/Traffic%20Accommodation%20rev.pdf, and Temporary Construction Signing at http://www.trans.gov.ab.ca/Content/doctype245/production/Specs2003.pdf section 7.1.

British Columbia

Generally pilot vehicles are required through seal coat operations where traffic volumes are significant. The contractor is responsible for all windshield damage claims, so they frequently choose to pilot.

Manitoba

Pilot vehicles are normally only used when a roadway is down to one lane of traffic on a two lane roadway and where there is a need to ensure that travel speeds are reduced.

Pilot vehicles are used on all seal coats and may be specified where weak shoulders exist. They are also used on bridge projects during concrete pour where there is a need to reduce travel speeds to reduce vibration.

Pilot vehicles are paid by the hour and contractors won't use them very often, unless the department pays for it. There is increasing usage of radio communicated flag persons as opposed to pilot vehicles.

A fatality involving a pilot vehicle occurred last year when a truck ran into the back of a queue (the same would have likely occurred with flag persons).

3.6 What are the required courses and levels of certification for field employees on a typical construction contract?

Saskatchewan

On a typical construction contract the field employees are required to take the following courses:

- First Aid/CPR (contractor & department staff)
- Anti-Racism & Sexual Harassment (department staff only)
- Due Diligence (department staff only)
- Flagperson Certification (contractor & department staff)
- Traffic Accommodation Supervisor Certification (contractor's Traffic Accommodation Supervisor must be certified, department staff)
- WHMIS (contractor & department staff)
- Nuclear Density Gauge Certification (department staff only)

Alberta

1. For flag persons, a certificate from the Alberta Construction Safety Association or other recognized program is required.
2. WHMIS training is the contractor's responsibility.
3. The consulting and contractor companies also need to have Certificate of Recognition from the Alberta Construction Safety Association or other recognized program.

British Columbia

1. WHMIS
2. Nuclear Density Gauge Certification (all staff). Note: The Ministry is backing away from this and getting consultants to do it due to the Atomic Energy Commission's requirements (> $20,000/yr for permits alone).
3. First Aid Level 1 (all staff)
4. Flag person Certification (all staff)
5. Traffic Control Training (lane closing)

"13 Deadly sins" (internal training to deal with traffic control, confined spaces, falling and highway construction).

Manitoba

The contractor is to ensure that their staff are trained to meet all Workplace Health and Safety regulations. As required, Department staff are trained in Nuclear Density Gauge Certification, Flagging, WHMIS and CPR/First Aid. The Department ensures that flag people have been properly trained. There is presently no certification program for flag people or Traffic Accommodation Supervisors, but the department is looking into this. The department employs roughly 1,400 employees, including engineering, administration, maintenance forces and specialty (traffic signal, pavement marking, seal coating and bridge maintenance) crews. There is one OHS officer for each of the 5 regions for training.

4 Human Resources

4.1 Describe the typical project staffing numbers, classifications and engineering percentage based upon total project costs on the following types of contracts.

4.1.1 Grading

Saskatchewan

Headquarters

- 1 Project Manager and/or 1 Assistant Project Manager

Field

- 1 Project Supervisor
- 1 Senior Project Technician – Survey Supervisor
- 1 Project Technician – Lab Person
- 2-3 Junior Project Technicians – Survey Crew

Engineering Percentage

- 10-20%

Alberta

Alberta Transportation

- 1 Project Administrator at regional office reports to Regional Construction Manager

Consultant

- 1 head office corporate support (only a few hours a week)
- 1 project manager plus a junior p.m. on a more complex job
- 1 or 2 survey crews (two or three person crews)
- 1 material technologist

Engineering Percentage

- 16 to 19% (includes design, but not Regional cost)

Note: Many grading jobs also include granular base course (see 4.1.2 below).

British Columbia

Field Services is the provincial organization for Paving & Grading Crews (HQ in Kamloops).

Field Service Construction Management covers all Projects. The Ministry provides the control survey. All slope stakes layout and quality control are provided by the contractor. The Ministry does prelim and final surveys for quantity calculations.

Field

- 1 Project Supervisor
- 1 Senior Tech (quality and quantity assurance)
  2-4 Junior Tech (assist on survey and inspection)

Engineering Percentage

- 8 – 12 % (percent of bid items, including materials)

Manitoba

Similar to Saskatchewan. The department would also normally have a Density inspector plus an assistant for flagging, etc.

The department performs a field audit on every project (go through the books, etc.). We used to have a "Resident" on every job, but we have recently gone to some senior technicians for project supervision.

Engineering Percentage

- ~10%

4.1.2 Granular surfacing

Saskatchewan

Headquarters

- 1 Project Manager and/or 1 Assistant Project Manager

Field

- 1 Project Supervisor
- 1 Senior Project Technician – Survey Supervisor
- 1 Project Technician – Lab Person
- 2-3 Junior Project Technicians – Survey Crew
- 2-3 Junior Project Technicians – Checker & Scale person

Engineering Percentage

- 10-15%

Alberta

Alberta Transportation

- 1 Project Administrator at regional office reports to Regional Construction Manager.

Consultant

- 1 head office corporate support (only a few hours a week)
- 1 project manager plus a junior p.m. on a more complex jobs
- If the job is a base/paving contract then the contractor supplies the survey. One consultant survey crew is used for only a few hours throughout the job to check for surface

tolerances.

- If the job is a grading and base course project, then the consultant supplies all of the survey.
- 1 material technologist.

Engineering Percentage

- 6 to 8%

British Columbia

Field

- 1 to 2.
- Contractor does construction quality and quantity control with 3rd party for testing.

Engineering Percentage

- 3 – 5 % (pay on "neat lines", minimal inspections)

Manitoba

Similar to Saskatchewan. The department would also normally have a Density inspector and 1 assistant.

Engineering Percentage

- ~ 10%

4.1.3 Paving

Saskatchewan

Headquarters

- 1 Project Manager and/or 1 Assistant Project Manager

Field

- 1 Project Supervisor
- 1 Senior Project Technician – Survey Supervisor/Road Inspector
- 1 Project Technician – Lab Person
- 2-3 Junior Project Technicians – Checker, Scaleperson, Survey Crew (as required)

Engineering Percentage

- 10-15%

Alberta

Alberta Transportation

- 1 Project Administrator at regional office reports to Regional Construction Manager.

Consultant

- 1 head office corporate support (only a few hours a week)
- 1 project manager plus a junior p.m. on a more complex job.
- No survey crew (maybe required to check whether existing barrier lines are correct on an overlay project).
- 1 - 3 materials technologist depending on whether other work is going on at the same time.
- The contractor obtains the cores at random locations determined by the consultant.
- The contractor will provide for quality control.

Engineering Percentage

- 6 to 8%

British Columbia

Headquarters

- 1 Project Manager per region to cover all rehab paving projects in region (province divided into 3 Regions).
- Ministry has a 3rd party consultant to do quality assurance testing, costs are reasonable.

Field

- 1 Project Supervisor
- 1 Tech
- 1 Lab Tech

Engineering Percentage

- Close to 5%

Manitoba

Similar to Saskatchewan. Also one asphalt plant inspector with one assistant.

Engineering Percentage

- ~ 10%

4.2 *Are there limitations on hours of service provided to the contractors? How do you control overtime on your contracts?*

Saskatchewan

No. The department has very little control over the amount of overtime on its contracts. The department is conducting a study on the issue of overtime

Alberta

No overtime for consultants.

British Columbia

Generally there are no limits on OT and everyone except managers are eligible. The Ministry has gone from continual engineering services to only periodic inspections. On some projects, hours are restricted so as to not interrupt traffic flows (night work specified). The Ministry is having difficulty keeping within the 6% OT entitlement.

Manitoba

No. Very little control. Limits on paid over time where most are banked at premium rates and used in the winter.

4.3 *Describe your travel and sustenance policy with regards to government employees away from headquarters.*

Saskatchewan

Return to headquarters (initial/completion of field assignment)
Travel time upon initial assignment to a field work location and upon completion of field assignment will be considered hours worked.

Return to headquarters (mid-week)
Employees working within 100 km of headquarters will be permitted to return to headquarters daily on their own time.
Employees working over 100 km and under 200 km will be allowed to return to headquarters on their own time once a week.
Employees working over 200 km will not be allowed to return to headquarters, unless approved by Project Manager.

Return to headquarters (weekly)
Work permitting, employees will be allowed one weekly trip, either returning to headquarters or travelling to the work locations, while on work time. Employees are expected to report to work at their regular starting time.

Notwithstanding the above:

- All travel within the Northern Administration District will be considered hours worked
- On assignment to a work location more than 125 km form headquarters, all travel beyond 125 km will be considered hours worked.

Meals	In Province	Out of Province
Per diem allowance	$38.00	$48.00
For partial days		
Breakfast	$8.00	$11.00
Dinner	$13.00	$15.00
Supper	$17.00	$22.00

Note: The above rates include GST, meal gratuities and overnight allowance.

No claim for a meal allowance may be made for:

- Breakfast, if departure is later than 7:30 a.m. or the return is earlier than 8:30 a.m.
- Dinner, if departure is later than 11:30 a.m. or the return is earlier than 12:30 p.m.
- Supper, if departure is later than 5:30 p.m. or the return is earlier than 6:30 p.m.

Accommodations are compensated at actual charge if it is reasonable and is supported by a receipt. An amount of $25 per night (no receipt necessary) will be paid for accommodation in private residences or in private trailers. Amounts in excess of $25 will be approved if no other accommodation is available and a receipt is provided.

Alberta

Full policy can be viewed on the website at http://www.pao.gov.ab.ca/benefits/travel/index.html.

British Columbia

These provisions are the result of many years of incremental collective bargaining, and are complicated and difficult to summarize.

Mobile staff – most project staff have no permanent headquarters (physically move to new location for each project). They may be moved on 15 days notice and are entitled to room and board, or may opt to be paid a mobile allowance and per diem totalling $33.34 per day to cover meals, accommodation and virtually all moving costs except the van moving their goods. This does create some HR problems.

Travel Expenses (short term only – up to 30 days)

Meals:

- Breakfast ($10.25)
- Dinner ($12.00)
- Supper ($21.00)

Mileage: $0.45 per kilometre

Accommodations are compensated at actual cost up to a maximum government rate (typically $70 per day + taxes; $115 in Vancouver). Employees have a $30 per day entitlement for "staying with friends" or private accommodation.

Paid travel time is limited to < 50 km for daily travel, but up to 100 km in isolated areas. (No return to headquarter, unless on expenses for 5 weeks).

Manitoba

All travel time for project staff is on the clock at straight rates only. There is no policy for mid-week travel (negotiated). Everyone is guaranteed at least one day off per week and contractors generally take every 2nd weekend off.

Meals	In areas covered my remoteness allowance	In all other areas
Per diem allowance	$31.51	$29.28
For partial days		
Breakfast	$6.74	$6.21
Dinner	$8.70	$8.17
Supper	$16.07	$14.90

Hotels have government rates and are billed to the Department or the employee is reimbursed. Private residence rates are 80% of the hotel rate in the area.

4.4 *With regard to construction contracts, how are you ensuring a diverse and equitable workplace?*

Saskatchewan

The contractor is encouraged to provide employment opportunities for the following groups of people:

1. Women in Non-traditional Roles
2. Persons of Aboriginal Ancestry; *(RSN)*
3. Persons with a Disability;
4. Members of a Visible Minority

The contractor will complete the Workplace Diversity Employment Report provided by the department and submit it to the engineer at least monthly. The contractor will submit a summary of the achievements at seasonal shutdown and with the clearances at the end of the project. This is a reporting requirement only since there are no associated payment implications.

The department has a zero tolerance policy towards harassment in the workplace. No reported incident will go unaddressed. Over 90% of the department's employees have taken a department developed Anti-Racism and Anti-Sexual Harassment course.

Generally the department requires contractors to employ a minimum of 40% (measured in person-days) Residents of Saskatchewan North (RSN) and/or Residents of Impacted Community (RIC) in its northern contracts to encourage northern employment. A bonus of $50-$100/person-day is given for exceeding this specification and a penalty of $100-200/person-day is applied for not meeting this specification.

The government's original intention was to eventually require contractors, under its Northern Hire Policy, to hire around 65 to 70% RSN and/or RIC. A committee is being formed to explore the practicality of meeting these levels.

Alberta

There is a government wide initiative to improve aboriginal conditions.
Projects completed near or on Indian Reserves may require the contractor to:

- Use a minimum number of employees (% varies job to job)
- Use aggregate supplied from the nearby reserve or Métis Settlement
- List employees and equipment from the nearby reserve or Métis Settlement (standard rates from Alberta Road Builder's)
- Minimum labour (same rates as regular employees)

There are no requirements for visible minorities or northerners.

British Columbia

This is up to the contractor (no restrictions). Similar to Saskatchewan, we do have contractors report on Workplace Diversity required by "Build BC Act" to consider disadvantaged employment opportunities for women, disabled, visible minorities and aboriginal peoples. There are target levels for First Nations employment for projects on I.R. land as well as in economically depressed areas (non-standard). The Province has a zero tolerance policy toward harassment in the workplace. See Appendix C-5 for the details on "Build BC Act" BC 21.

Manitoba

For any major northern construction project, the Department requires all bidders to use a minimum 10% northern aboriginal involvement (hire of labour, equipment or purchase of supplies) before awarding the contract. For northern projects which are of a short duration or very mobile in nature (depositing and stockpiling aggregate on the roadway), we are only including a Schedule of Labour clause that is not mandatory but requests bidders to consider hiring locally available labour.

To help identify the local labour pool available to contractors, a copy of northern tenders is sent to the Department's aboriginal employment co-ordinator. In conjunction with the requirement for 10% northern involvement, the Department's regional offices have developed a bi-weekly reporting form to monitor the Contractor's hiring practices (penalties involved).

The Department has a zero tolerance policy towards harassment in the workplace. No reported incident will go unaddressed through our Respectful Workplace Policy.

5 Innovations

5.1 What is your policy on electronic tendering?

Saskatchewan

The department does not use electronic tendering. Tender results and department's estimated cost are available on the website. The department does use its own internet service "Tender Post" to advertise tenders (as well as by newspaper) and post tender results only.

Alberta

There is no present move toward electronic tendering. Tenders are advertised electronically. There are five office locations for pick up of tender packages. Addendums are e-mailed to registered plan holders. Completed tenders are not submitted electronically.

British Columbia

Started electronic tendering as of April 19, 2004. Information can be downloaded from the internet with a fee of $200/year and hard copy of the document can be ordered (cost is per page if registered). Addendums are also electronic, but can't electronically submit bid bonds. This is done through a BC government system, not Highways. The department is moving to all electronic tenders.

In the tendering process, contractors are registered with the tendering agency (ID Key code) for security. The secure server will not allow access until closing time at 2:00 pm (shutdown/ downloads/ prints/ public opening ~ ½ hour later).

Lawyers advised not to include any evaluation for the electronic copies for fairness issues. Therefore, problems from hard copies still exist except for built-in calculations in the electronic copy.

Manitoba

The Department does not currently use electronic tendering but this is currently being reviewed. We are currently only using electronic advertisements (internet & MERX, no newspapers except for smaller contracts). Tender results and tabulations are available on the Department's internet site (www.gov.mb.ca/tgs/contracts/tenders/index.html.)

5.2 What type of alternative surface treatments are you using?

Saskatchewan

The only alternative surface treatments the department has been using on a regular basis are micro-surfacing and graded aggregate strip seals for rutting. The department recently had a pilot project on cold in-place recycling.

The department also experimented with hot in-place recycling in 1980's and early 1990's. This year the department is using a glass grid geotextile on an asphalt resurfacing project to prevent reflective cracking over a highly expansive clay sub-grade.

Alberta

The department occasionally uses micro-surfacing in lieu of chip seal and may be using this year for rut filling. Micro-surfacing costs about 50% more than seal courting.

Full Depth Reclamation (similar to CIP recycling) has been tried but is not regularly used. This involves milling the entire AC layer plus roughly 100 mm of the base. Emulsion or foamed asphalt can be added.

Hot in-place recycling has been used but not in the past four years. Thin single lift (40 and 30 mm) overlays are also starting to be used (10 yr. designs, pavement preservation).

British Columbia

Alternative surface treatments:

- Mostly mill/fill/overlay
- Super Pave (used frequently)
- Micro surfacing
- Hot in Place
- Cold recycle plus a HMA top lift
- Glass Grid (non recyclable) works well for cracks (have quit using this as it precludes effective recycling)
- Low noise (not common)
- Sulphur (non recyclable)
- Rubberized AC (20,000 t test job this year can't recycle later)
- Cement stabilized base (used in Pine Pass and Vernon, caused problems in the north, OK in the south) Very difficult to work with in rehabilitation and expansion projects.
- Currently looking at foamed asphalt stabilization as a trial this year

A low volume road was built in the Peace River area as a test section for testing 10 to 11 different products. Due to a large increase in traffic volume, all test sections have failed. Therefore, it was not able to provide any accurate results.

Manitoba

The only alternative surface treatment TGS has been using on a trial basis is micro-surfacing. The Department has done some modified cold in place recycling with the modification being no emulsion or binder added to the roto-milled surface. This has worked exceptionally well in northern Manitoba on old tired pavements. This year the Department is also doing a trial with different paving fabrics (Glassgrid, Pro Guard and Miratac). These fabrics will be used to treat reflective cracking of singular cracks and not over the entire surface area.

5.2.1 Please discuss your experiences, issues and problems with alternate surface treatments.

Saskatchewan

Micro-surfacing has proven to be a reliable surface treatment for rut filling, transverse cracking and surface sealing/rejuvenation. The department has had minimal problems with micro-surfacing.

The benefits that the department has observed when comparing micro-surfacing to a granular seal coat are:

- No loose aggregate
- No dangerous emissions
- Restores uniform black appearance to surface
- Quieter ride
- Better public perception

Alberta

Micro-surfacing is 50% more expensive than seal coat and does not last any longer. Some people are disappointed with the appearance as they think it is a very poorly constructed asphalt overlay. It is good for traffic accommodation (quick setup) with no loose chips.

We are still evaluating the performance and economics of Full Depth Reclamation.

Hot-in-place recycling has a slightly shorter service life than cold mill and inlay and thus is not often chosen due to economics.

British Columbia

Generally pretty good.

Manitoba

The trial projects of micro-surfacing to date have been very poor. The surfaces have experienced serious flushing of the emulsion on the surface. One area was seal coated with concern that the surface would be too slippery. Although the treatment did rectify the rutting problem as expected, the surface was far from acceptable.

Again the biggest problem was administering the EPS contract and holding the contractor responsible. We again had some issues with quality control on the two additional projects completed this year.

5.3 *What type of communication devices are field crews using?*

Saskatchewan

The project supervisor is equipped with a cell phone and/or a Fleetnet (radio phone). The survey crew is equipped with a Fleet net. In northern, remote areas the department crews have been using satellite phones. The temporary field office is equipped with a fax machine and/or internet connection as required.

Alberta

The consultant's Project Manager is to have a cellular phone. Most department people travel with a cell phone. The consultant's field office is usually out of a hotel room and may have computer access to the internet.

British Columbia

- Land lines (phone, fax and data)
- Cell phone (including "Mike" system where available), all Project Supervisors and assistants have cell phones
- Satellite phone (some)
- Radio System (good Ministry system, decreasing use)
- Radio Phone
- Computer – e-mail, Internet
- Will be piloting satellite internet service for remote offices.

Manitoba

Similar to Saskatchewan. Fleetnet is being used less and less in the south.

5.4 What type of equipment and software are survey crews using?

Saskatchewan

Equipment:

- Conventional level/transit & Corvallis
- Total Station (Reflector & Reflectorless)
- Real Time Kinematics GPS on an ATV (Trial Basis)
- Hand Held GPS

Software:

- The department is currently switching from EMXS to AutoDesk's CAiCE.

Alberta

This is entirely up to the consultant (design/build). Most of the consultants are using EMXS; however Eagle Point and other design packages are also being increasingly used. The department would like to audit the consultant's precision in determining quantities.

British Columbia

Equipment (currently looking at updating):

- Geodimeter Total station (obsolete)
- Trimble Robotic/reflectorless 5602 DR 200 or 300 (good accuracy, but have concerns regarding 1-man crew)
- GPS available through our Design & Survey crews
- DAP Microflex 5320 data collectors (looking at updating)
- Looking at "digital point cloud laser surveying" using Cyrax HDS2500 or HDS3000 high definition scanner and data interpretation with Cyclone V-4.1.2. This creates a 3D model with phenomenal detail (picture with 100,000 points each). It can even shoot through traffic. We are considering this for the road to Whistler.

Software:

- TDS SurveyPro 3.8.1 for field survey work
- Foresight DXM 3.0.0 for field survey reduction
- CAiCE Version 9.1 for construction supervision (upgrading to version 10 SP4 September 2004)
- AutoCAD Version 2002 for as constructed drawings (upgrading to version 2005 in September 2004)

Equipment and Software websites:

- http://www.graftek.com.tr/tr/support/Brosur/5600newdatasheet.pdf
- http://hds.leica-geosystems.com/products/products.html
- http://www.tdsway.com/?Sec1=products&grp=svy&Sec2=surveypro&Sec3=overview

Manitoba

Equipment (Similar to Saskatchewan):

- 4 GPS crews with 8 survey grade quality receivers (Trimble) and 30 handheld mapping grade units.
- Use total stations (Geodometer/Trimble and Leica) almost exclusively using Carlson SurvCe

Software:

- currently IGRDS (being reviewed)

5.5 Do you make use of web cameras? If so, what are the circumstances in which you use web cameras?

Saskatchewan

The department presently does not use web cameras but is currently studying possible use for web cameras.

Alberta

No. This may be an ITS initiative in the future, but for traffic operations only. AT uses video conferencing between head office and the four Regional offices plus Calgary.

British Columbia

Not to watch a contractor's operations. We do use this for high volume traffic areas such as the Coquihalla and Sea-to-Sky.

Manitoba

No.

6 Contact Information

6.1 Please provide contact information for the appropriate contact(s) in the area of construction policies and standards.

Saskatchewan

Construction & Contracts	
Richard Flaman, Director	rflaman@highways.gov.sk.ca (306) 787- 4943
Paul Rachar, Construction Engineer (Regina)	prachar@highways.gov.sk.ca (306) 787 - 4953
Christopher, Robin Construction Engineer (Saskatoon)	rchristopher@highways.gov.sk.ca (306) 933-5269
Allan Folkersen, Construction Standards Analyst	afolkersen@highways.gov.sk.ca (306) 787 - 4868
Kelly Mandzuk, OH & S Coordinator	kmandzuk@highways.gov.sk.ca (306) 787 - 2768
Anita Kung, Engineering Assistant	akung@highways.gov.sk.ca (306) 787-8648

Alberta

Jim Gavin, Roadway Construction Standards	jim.gavin@gov.ab.ca, Construction Specifications (780) 415-1008
Don Snider, Manager of Transportation Projects	Don.snider@gov.ab.ca, Environmental Management (780) 415-1387
Marta Juhasz, Roadways Materials Engineer	marta.juhasz@gov.ab.ca, Construction Materials (780) 415-0691
Allan Donovan, Manager Consultant Compliance and Performance	allan.donovan@gov.ab.ca, Consultant Administration (780) 422-4202

British Columbia

Rodney Chapman, Director	Rodney.Chapman@gems5.gov.bc.ca Ph: (250) 387-7626
Don Shaw Provincial Construction Manager	Don.Shaw@gems6.gov.bc.ca Ph: (250) 828-4226

Manitoba

Lance Vigfusson, Executive Director of Construction and Maintenance	Lvigfusson@gov.mb.ca (204) 945-3775
Ron Weatherburn Contract Engineer	Rweatherbu@gov.mb.ca (204) 945–7035
Randy Pitz Manager Quality Assurance	Rpitz@gov.mb.ca (204) 945-5306

6.2 Please provide the web address for your manuals, specifications, and reports

Saskatchewan

http://www.highways.gov.sk.ca/docs/transition/reportsManuals.asp

Alberta

www.trans.gov.ab.ca
go to Publications, then to Standards and Specifications

- Construction
    - Highway Construction Specification
    - ECO Plan
- Maintenance
    - Contract Administration Manual

British Columbia

http://www.th.gov.bc.ca/mot_org/const_maint/cmb.htm
go to Rehabilitation & Construction Section

- Construction Contract Services
- Construction Maintenance Publications

Manitoba

http://www.gov.mb.ca/tgs/contracts/index.html

Appendix A Saskatchewan Highways and Transportation

A-1 Road checker and Scale person Training Manual

Road Checker & Scale Operator

Training

Manual

(Pilot Project)

Revision : April, 2004.

Introduction

The information contained in this manual is designed to enable the participant to understand the role of the Road Checker and Weigh Scale Operator and be familiar with the duties and procedures that relate to their positions. Since there is considerable risk involved in performing these job tasks, correct working procedures and all safety related items will be stressed throughout the material in this manual.

Your role, as a Road Checker and Scale Operator, plays a very important part in the overall construction, rehabilitation and / or repair of the highway system. In order to become familiar with the knowledge required for their positions, it is necessary for you to read the material in this module and understand what is expected of you at the worksite.

Training Process

The training process for the task of Road Checker and Scale Operator includes :

- The participant reading the manual.
- Completing the review questions in the back of the manual.
- A written test based on the contents of the manual.
- A practical demonstration with the Supervisor.

This process is necessary to ensure the employee has the required knowledge and skill to carry out his / her duties independently. After the training is complete the Supervisor will monitor the employee to determine that the correct procedures are being followed.

Role of the Road Checker

The Road Checker serves three functions when performing duties on the worksite. The Road Checker is responsible for :

- ➢ Collecting the weigh tickets from each of the truck drivers that deliver the material to the job site.
- ➢ Quantity control in measuring out the distance that each truck load has to travel when unloading / dumping material at a given rate.
- ➢ Record and keep track of quantities in each kilometer to ensure the contractor adheres to the quantities stipulated in the contract.

Procedures for these functions will be explained further in this module.

The **role of the Scale Operator** will be explained in the second part of this module starting on page 15.

Job Related Hazards

As an employee, you have the right to know what dangers and hazards exist in the workplace. The Road Checker is one of the most dangerous jobs in the construction area. The checker is exposed to not only the trucks that are backing up to unload the material, but other work zone equipment as well. Also, depending on the location where the work is taking place, there could be normal traffic traveling on the roadway close to the job site.

Other hazards that are present include a variety of different weather conditions. Temperature can range from extreme heat to very cold, and from rainy to dusty conditions. The Road Checker can expect these changes in conditions and must be equipped and properly dressed for them.

Mandatory Personal Protective Equipment (P.P.E.)

- Safety Boots. (As per employer's policy. Refer to Safety Manual – Section 1200 ; subsection 100.
- Hi – Visibility vest.
- Blaze orange / fluorescent hard hat.

Long pants are mandatory when working on asphalt paving jobs, and worn at all times due to the risk of the hot material.

Any clothing worn should be highly visible. The key to your safety is visibility. If you cannot be easily seen by operators of the equipment and motoring traffic, then you are putting yourself at risk.

One piece of equipment that is necessary for the Road Checker to carry out the job is a measuring tape or odometer wheel. It is normal for the checker to be supplied with the wheel to measure the distance that a truck is required to travel when dumping a load of material. The **odometer wheel** is easier to handle than the tape measure, however, care must be taken to ensure it is not left on the road where is could be buried under the material or run over by a vehicle.

It is the employee's responsibility to look after the equipment that is supplied.

Additional (optional) items :

- Clipboard (particularly for checking on a paving operation).
- Pen / pencil
- Eyewear (sunglasses for bright conditions / goggles for dusty conditions).
- Rainwear (must be highly visible).
- Calculator.
- Water (for use on hot days).
- At times, a lunch must be packed as distances to town may be too far.
- Appropriate clothing that is suitable for the weather conditions.

Washroom facilities are normally located at the pit or stockpile sites.

Note : Road Checkers must never use any personal radios, tape or CD players, or other device that may impair their sight, hearing or attention while working on the job.

Figure 1.

Note: Road Checker with required P.P.E. facing equipment. The key is **"see and be seen".**

Personal breaks

The Road Checker needs to communicate with the Supervisor and arrange for regular breaks. You should not leave your position until someone is there to replace you.

Procedures for Base / Sub-Base Operation

The following are the normal procedures and safe operating practices that are required for the placing of Base and Sub – Base materials. As mentioned earlier in this module, the two functions of the Road Checker are to collect the weigh tickets from the truck drivers and to measure the distance a truck is required to spread the material.

- The Contractor identifies what kilometre on the job site the trucks are to start dumping. (There are markers called control lines. They increase by 25 metres from South to North and from East to West, in most cases).
- Determine where the windrow (ridge of material) is to be placed.
- Mark the starting point that the truck is to back up to prior to unloading.
- Always stand to the rear of the truck, off to one side where you can be easily seen by the approaching truck driver, preferably facing oncoming traffic. (note Checker positioning in the following illustration #2).
- One item to note is that if a truck dumps the load short or long of the required distance, the Checker marks the next load from where the last measurement left off, not where the truck dumped to.

Illustration #2.

- Once the truck has stopped. Walk up to beside the driver and take the weigh ticket (white copy). Clip this into the clipboard if you have one. Note – illustration #3, on the next page. Caution : be aware of how you use the clipboard in windy conditions. Take extra care to ensure the tickets do not blow away.

Note : ***Never walk up beside a truck while it is moving. Always ensure the truck is fully stopped.***

- Identify the net weight of the load (weight of the material only) and compare it to the required depth of spread, as noted on the chart given to you by the Supervisor. This will show you the distance that the truck needs to travel to obtain the correct spread distance.
  For example : A load of 20 tonnes of base material spread at a depth of 150 mm would calculate to be a spread distance of 8 metres in length.

Illustration #3

- Measure the required distance with the Odometer wheel or tape measure and place a mark on the road surface on the driver side that can be seen by the truck operator.
- Move back to the rear of the truck, in a location visible to the driver.
- Indicate to the driver to raise the dump box of the truck. (The driver must not start to lift the truck box until the dump distance has been measured, marked and the technician has returned to a safe distance behind the truck).

Caution : Do not allow the truck operator to raise the box while backing the unit up.

Caution : Do not stand beside the truck while the truck box is being raised. Note illustration #4.

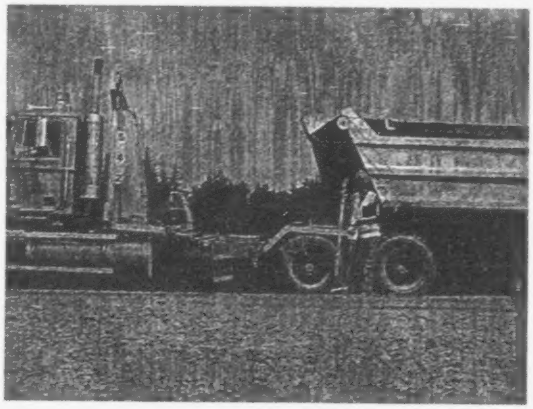


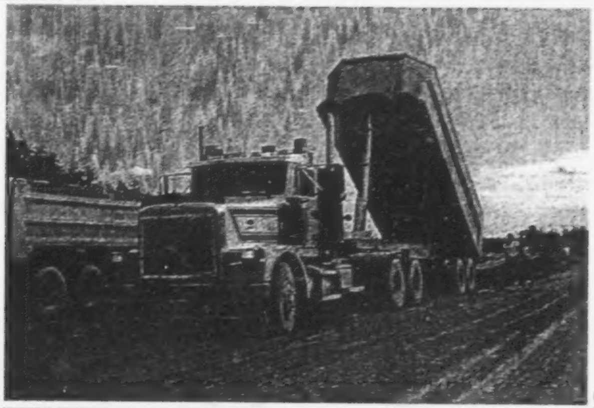
Illustration #4

The *danger* of standing beside the truck, while the box is being raised is the possibility of a hydraulic hose breaking under pressure. The Checker could get covered with hot oil. Also, an object could come loose on the truck and endanger the person standing beside it. Never be in this position (illustration #4) when the truck box is being raised.

- Once the box is at the required height, and you are safely positioned, signal the truck driver to trip the tailgate and proceed forward to spread the material.

Note : **Stand at least 5 – 7 metres behind the truck tailgate.** This will give you a safe distance and allow for the swing of the tailgate. Illustration # 5.

Illustration # 5.



Correct position of Checker.

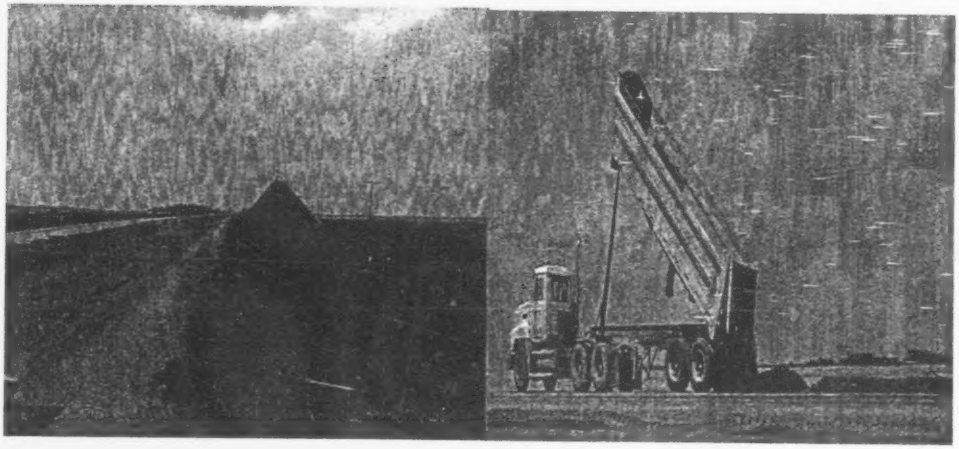
Note the odometer wheel laying beside the truck in the picture above. The odometer wheel is part of the Road Checker's equipment and needs to be maintained and looked after. It may get buried under the material, misplaced or damaged if used in this manner. When marking the distance for the spread, it is best to use a lathe (wooden stake) or an orange colored cone.

- The Road Checker can monitor the speed of the truck with the distance to be covered and can signal the driver to speed up or slow down as necessary.

All trucks involved in this operation are required to have a "**Back up Alarm**". If the back up alarm is not audible, while the truck is backing up, then the Checker needs to inform the driver. The driver must then have the back up alarm repaired before he / she returns with the next load.

If the back up alarm is not repaired and the Checker cannot hear it, then the Checker has the right to refuse to take the driver's weigh ticket and not allow the unit to unload.

Overhead Power Lines



As you may be aware, a truck box raises to a considerable height. You must always be alert to the presence of overhead power lines. Watch for the signs as noted in the left illustration above.

When you see these signs, notify the driver of the location of the power lines. You can do this when you take the weigh ticket from the driver. In the vicinity of power lines, stand 20 metres away from truck. If the truck contacts an energized power line there is a danger that anyone close to the unit could be electrocuted.

- Once a truck has emptied its load of material, it must proceed forward away from the immediate area and turn around at an appropriate location. A truck is never allowed to back down the shoulder of the road beside the windrow of material. Note the picture in illustration # 6 on the next page.

Correct positioning of the Checker

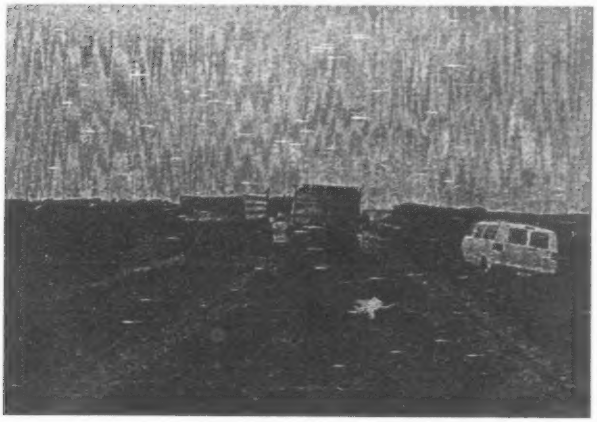


Illustration # 6.

Note the correct position of the checker in illustration # 6 above. The trucks are driving away from the checker's position. Also note, that any small vehicles must be parked so that they do not interfere or create an obstruction to the operation. They must be parked well off to the shoulder of the road, preferably in the ditch whenever possible. An ideal location is to have them parked on an approach, well back from the working surface. No vehicles should be parked close to the Checker's location. At the end of the work day, the checker can catch a ride back to his / her vehicle with other workzone personnel.

The Checker must be aware of all vehicles in and around the work area. This includes both the work equipment and the motorists traveling through the work zone.

It is important that you realize there must never be anything to impair or interfere with your ability to see and hear.

Hazards of the Job

The following are hazards and potential dangers that the Road Checker could be faced with :

- Trucks do not stop.
- The truck driver may drive close to the checker and try to knock off his / her hat. (be aware of truck position as well as your own). If this happens, report the situation to your Supervisor as soon as possible.
- Hydraulic hoses may burst on the truck, which could endanger the checker by spraying hot, pressurized oil. (maintain your distance and position as discussed earlier in this Module).
- The tailgate on the truck slams shut after the load is emptied. This creates an extreme noise factor. Also **never** get between the open tailgate and the truck box for any reason. This area is a pinch point and the checker could get trapped.
- Windy days create dusty conditions. (eye protection is to be worn as discussed earlier in this Module).
- Traffic traveling through the work area adjacent to the Checker's position, which creates an added danger.
- Trucks turning too close to the windrow. Trailer does not follow directly behind the tractor unit (off track of the trailer). The driver may not leave enough room for the checker between unit and windrow.

Responsibilities

Employer
Has the responsibility to provide the employee with the knowledge and skills to safely perform the task; inform the employee of the hazards and risks involved in performing the task, and providing the necessary safety equipment and materials required to carry out the task.

Employee
Has the responsibility to understand the work to be carried out; the hazards and risks associated with the task; and the ability to perform that task in a safe and responsible manner.

Ultimately, the employee is responsible for their actions on the work site, and to ensure that he / she follows all correct procedures when performing the task.

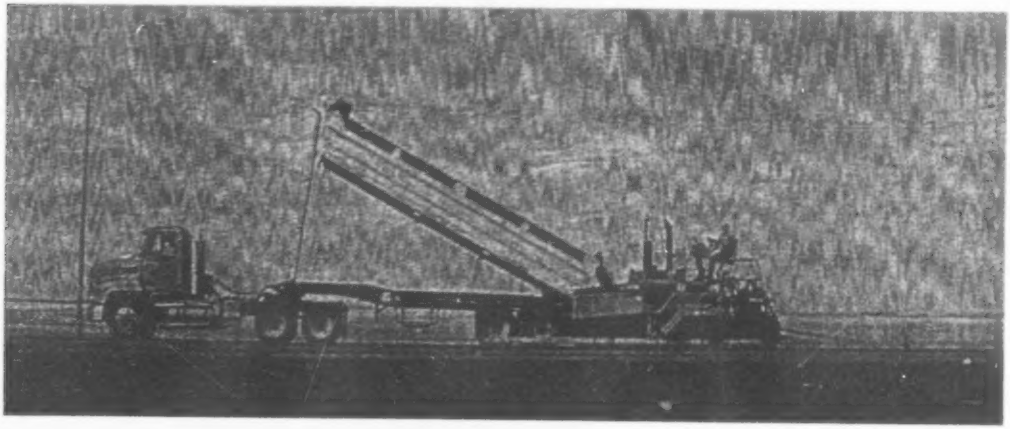
Road Checker Procedure for
Paving / Hot Mix

The Road Checkers procedures and duties on a paving / hot mix job are similar to that previously described in this Module. The mandatory items – Hard Hat; Hi – Viz vest and Safety Boots are applicable, and the additional / optional items would still apply as necessary.

The following are some additional steps that are required for this type of operation.

- ➢ The Checker may be given a sheet to record the following information :
- Number of the truck.
- Tonnage (weight) of each truck load.
- Distance for spread length (guideline).
- Actual distance of spread length.
- (note : see example sheet at the end of this module).

The above items are all governed by lift thickness.



- ➢ The Checker shall collect the weigh ticket from the truck driver before the truck is backed into the paving machine.

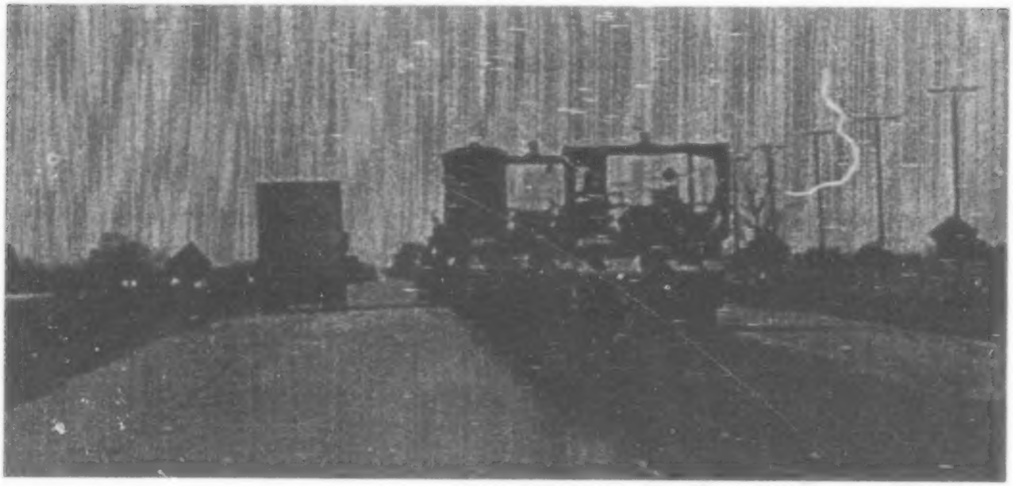
- The Checker will measure the distance after the load is dumped.
- The Checker is to keep track of the "lots". A "lot" is 200 t of asphalt and this record is used by the soils person to know where to perform density checks. Start and end stations are to be recorded every 200 tonnes.
- On many jobs, the Checker is given a formula that verifies the tonnage requirement that is checked against the actual tonnage used. For example – for a 50 mm lift of AC the following formula would apply. Length (1000) x width (3.7) x depth (0.05) x density (2399) divided by 1000 = 443.8 t/km.
- Paver operators will not adjust the depth of the lift continuously, as this would defeat the purpose of the paver smoothing out the surface. Normally, the tonnage checks are carried out every couple of hundred metres, and the "lot" records the Checker must maintain, help to do this. The paver operator is informed of the tonnage, if it is high or low.
- The Checker normally carries an infra – red thermometer used to check the temperature of the asphalt. The average temperature for the material that is placed into the paver is approximately 120 C – 140 C. The minimum temperature allowed is 90 C. If the material is colder than the minimum temperature, the Checker can reject the load, after approval by the Project Supervisor.

The Checker is never allowed to ride on the paver. He / she can walk across the screed pad to gain access from one side to the other, if the paver operator allows you.

(It would be preferable to access the paver (if allowed) when the paver is not moving as the paver may stop suddenly or unexpectantly).

Compaction equipment (Packers)

Below is an example of some compaction equipment in use on a paving operation.



Hazards of a Paving Operation

- Hot materials. As noted in the previous page, the asphalt is approximately 120 degrees C. – 140 degrees C. It is important that you do not come in contact with this material. Contact can cause severe burns. Long pants are mandatory in a paving operation.
- Flammable liquids. Diesel fuel is used on and around the paver. As with any flammable liquid, there is the danger of fire and / or explosion.
- Watch for the compaction equipment (rollers and packers). They are constantly moving back and forth compacting the spread material. Sometimes the operators get tired, and may not be paying close attention. Be alert to your position and the position of any equipment in the work area.
- Traffic dangers. The traffic may come close to your position, particularly on a two – lane roadway. As mentioned earlier in this Module, the Checker is not allowed to have anything that will impair or interfere with his / her ability to see and hear while on the job.

Your best defence is - "to see and be seen"

- Do not position yourself or walk between the truck and the paver.
- Never stand behind a truck that is backing up. Always be visible to the truck driver.
- Do not ride on the paver.

The employee has a right to refuse to allow the contractor and / or driver to implement any unsafe or incorrect procedures. Any unsafe act or incorrect procedure should be brought to the attention of the contractor / driver, noted and then advise your Supervisor as soon as possible.

Conclusion

Thank you for participating in the Road Checker training program. We hope you understand the importance of the job and realize the need to perform the task in a safe manner.

It is hoped that you found the information contained in the module to be interesting and informative. You will note, safe working practices and procedures have been stressed at all times. Your safety depends on you knowing what to do, how to do it, and to understand the risks and hazards that could be associated with the role of a Road Checker.

Please note the next few pages that provide information on the component of weigh scale operation.

Weigh Scale Operation

Since the Road Checker will also be required to perform the duties of a Weigh Scale Operator, some basic information will be provided in this segment.

The function of the Scale Operator is to weigh the trucks for the purpose of quantity control of various materials. The scale is part of the Contractor's equipment, however, Department of Highways staff are used in the actual weighing and recording of the trucks.

Procedure

- An emergency response plan must be established, in accordance with the Occupational Health and Safety Regulations, prior or the start of operation, and this plan must be posted in the scale house.
- The Scale operator must have the required Personal Protective Equipment which is a - Hard Hat; Hi – Viz Safety Vest and Safety Foot wear.
- Visually inspect the scale house for adequate power, heat, light, ventilation and that all doors and windows are in good working order.
- Ensure the Contractor has cleaned the scale house.
- Ensure the scale has a certification sticker. If not certified, notify your Supervisor and arrangements will be made for trained Department staff to certify the scale.
- Perform a scale accuracy inspection and complete the forms. Refer to the Technician Survey Manual (TSM) 9912. Your Supervisor will provide the necessary forms and review the Technician Survey Manual with you.
- Set up the ticket machine and install the required job specifications. Refer to Highway Construction Information System (HCIS) program manual for electronic note keepers. Your Supervisor will provide and review this manual with you.
- Weigh each of the trucks empty (tare weight).
- Make a list of the truck numbers and corresponding tare weights.
- Check to see if the truck box height is identified on the left side of the truck box.
- Complete a registration form for each of the trucks on the job site.
- Begin weighing the loaded trucks as they pull onto the scale, then document and file the weigh tickets accordingly.
- At the end of the shift, shut off the ticket machine, remove it from the scale house, turn off the power and lock up the scale house if required.

Job Related Hazards

The scale house operator must be aware of any risks or hazards associated with his / her duties. The following are some things to be aware of :

- Safety eye wear is recommended. Due to the movement of the trucks, there is frequently a considerable amount of dust around the scale house.
- The employees must always be alert to the movement of construction equipment and other related traffic around the scale house location.
- Employees shall always monitor the trucks driving onto the weigh scale. Any truck driver who is operating in an unsafe manner shall be reported to the Contractor and your Supervisor.
- If you are working alone or in an isolated area, refer to the Safety Manual (SM) 500-000. This policy was identified to you in your initial orientation and your Supervisor has a copy of the Safety Manual for further reference.
- Wooden ladders for the scale house are not acceptable. Proper stairs and hand rail are required. Note illustration # A.
- The scale house must have an adequate escape route. You should not be trapped between the scale house and the scale deck. Note illustration # B.
- Cleanliness of the scale house. At times, the scale house can be infested with mice and other rodents. The scale operator should monitor and keep the scale house clean while the job is ongoing. However, on initial start up of the job, it is the responsibility of the Contractor to ensure the scale house has been properly cleaned prior to using. If the scale house has not be cleaned and is in an unsanitary / unsafe condition, then the scale operator has the right to refuse to work in the scale house.

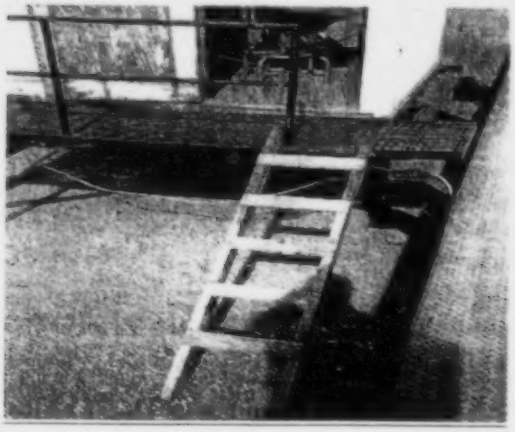
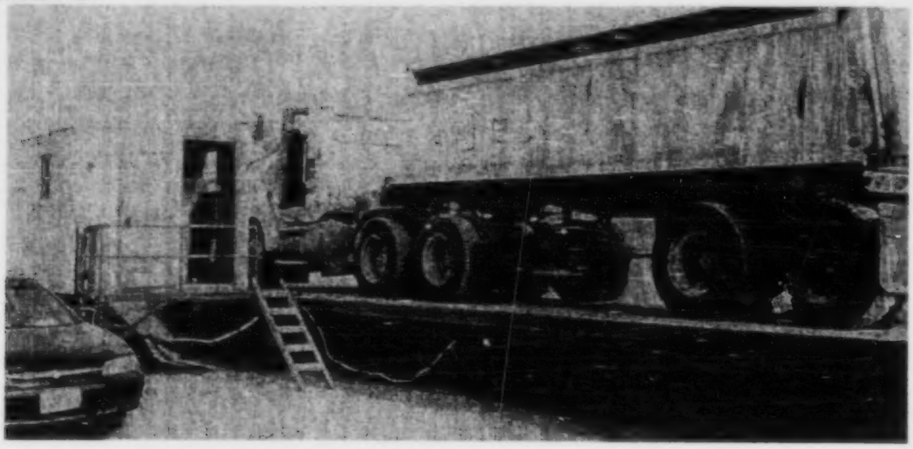


Illustration # A.

Illustration # B.



Note the ladder in the above picture is right beside the scale deck. The ladder should be located to the far outside of the scale house. The scale operator always needs to ensure a safe exit from the scale house. Another safety item is, the door to the scale house **must** face the opposite direction from which the trucks approach. This ensures an adequate exit in the event of an emergency.

Note - Any deficiencies are to be reported to your Supervisor or the Project Manager.

Required tools / Equipment

- Ticket machine or hard copy ticket books.
- Calculator.
- Required stationary supplies.

Conclusion

Now that you have completed the module, please note the questions on the following three pages. They will provide you with an opportunity to review the information covered in this module. Make sure you read each of the questions and all the corresponding answers. Although some of the information may apply, there is only one correct response for each question.

To complete the Road Checker training there will be a final written test based on this module, and a practical demonstration and application on the job site that will be reviewed by your Supervisor.

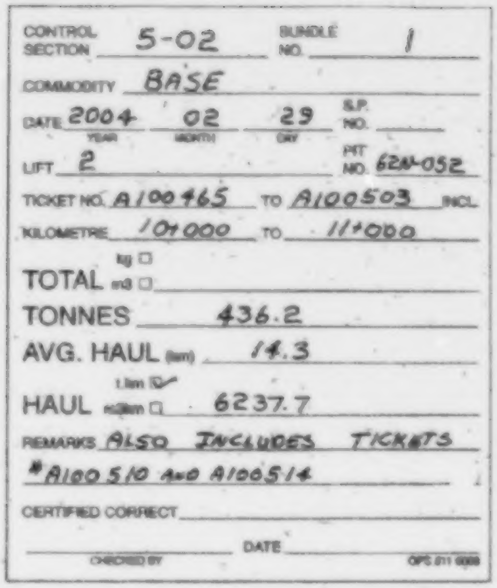
It is expected that once you have completed all the requirements, you will apply the learned techniques and procedures necessary to perform the Road Checker and Weigh Scale operator duties in a correct and safe manner.

Notes :

EXAMPLE DUMP DISTANCE CHART

CSS-02 MORSKY Construction
2300
BASE- 1 lift 150mm

Tonnes	Distance	Tonnes	Distance	Tonnes	Distance	Tonnes	Distance
17.0	7.4	22.1	9.6	27.2	11.8	32.3	14.0
17.1	7.4	22.2	9.7	27.3	11.9	32.4	14.1
17.2	7.5	22.3	9.7	27.4	11.9	32.5	14.1
17.3	7.5	22.4	9.7	27.5	12.0	32.6	14.2
17.4	7.6	22.5	9.8	27.6	12.0	32.7	14.2
17.5	7.6	22.6	9.8	27.7	12.0	32.8	14.3
17.6	7.7	22.7	9.9	27.8	12.1	32.9	14.3
17.7	7.7	22.8	9.9	27.9	12.1	33.0	14.3
17.8	7.7	22.9	10.0	28.0	12.2	33.1	14.4
17.9	7.8	23.0	10.0	28.1	12.2	33.2	14.4
18.0	7.8	23.1	10.0	28.2	12.3	33.3	14.5
18.1	7.9	23.2	10.1	28.3	12.3	33.4	14.5
18.2	7.9	23.3	10.1	28.4	12.3	33.5	14.6
18.3	8.0	23.4	10.2	28.5	12.4	33.6	14.6
18.4	8.0	23.5	10.2	28.6	12.4	33.7	14.7
18.5	8.0	23.6	10.3	28.7	12.5	33.8	14.7
18.6	8.1	23.7	10.3	28.8	12.5	33.9	14.7
18.7	8.1	23.8	10.3	28.9	12.6	34.0	14.8
18.8	8.2	23.9	10.4	29.0	12.6	34.1	14.8
18.9	8.2	24.0	10.4	29.1	12.7	34.2	14.9
19.0	8.3	24.1	10.5	29.2	12.7	34.3	14.9
19.1	8.3	24.2	10.5	29.3	12.7	34.4	15.0
19.2	8.3	24.3	10.6	29.4	12.8	34.5	15.0
19.3	8.4	24.4	10.6	29.5	12.8	34.6	15.0
19.4	8.4	24.5	10.7	29.6	12.9	34.7	15.1
19.5	8.5	24.6	10.7	29.7	12.9	34.8	15.1
19.6	8.5	24.7	10.7	29.8	13.0	34.9	15.2
19.7	8.6	24.8	10.8	29.9	13.0	35.0	15.2
19.8	8.6	24.9	10.8	30.0	13.0	35.1	15.3
19.9	8.7	25.0	10.9	30.1	13.1	35.2	15.3
20.0	8.7	25.1	10.9	30.2	13.1	35.3	15.3
20.1	8.7	25.2	11.0	30.3	13.2	35.4	15.4
20.2	8.8	25.3	11.0	30.4	13.2	35.5	15.4
20.3	8.8	25.4	11.0	30.5	13.3	35.6	15.5
20.4	8.9	25.5	11.1	30.6	13.3	35.7	15.5
20.5	8.9	25.6	11.1	30.7	13.3	35.8	15.6
20.6	9.0	25.7	11.2	30.8	13.4	35.9	15.6
20.7	9.0	25.8	11.2	30.9	13.4	36.0	15.7
20.8	9.0	25.9	11.3	31.0	13.5	36.1	15.7
20.9	9.1	26.0	11.3	31.1	13.5	36.2	15.7
21.0	9.1	26.1	11.3	31.2	13.6	36.3	15.8
21.1	9.2	26.2	11.4	31.3	13.6	36.4	15.8
21.2	9.2	26.3	11.4	31.4	13.7	36.5	15.9
21.3	9.3	26.4	11.5	31.5	13.7	36.6	15.9
21.4	9.3	26.5	11.5	31.6	13.7	36.7	16.0
21.5	9.3	26.6	11.6	31.7	13.8	36.8	16.0
21.6	9.4	26.7	11.6	31.8	13.8	36.9	16.0
21.7	9.4	26.8	11.7	31.9	13.9	37.0	16.1



CONTROL SECTION 5-02 BUNDLE NO. 1

COMMODITY BASE

DATE 2004 02 29 S.P. NO.

YEAR MONTH DAY

LIFT 2 PIT NO. 62N-052

TICKET NO. A100465 TO A100503 INCL.

KILOMETRE 10+000 TO 11+000

TOTAL kg ☐ m3 ☐

TONNES 436.2

AVG. HAUL (km) 14.3

HAUL t.km ☑ m3.km ☐ 6237.7

REMARKS ALSO INCLUDES TICKETS
#A100510 AND A100514

CERTIFIED CORRECT

CHECKED BY DATE

The above shows an example of the envelope used for the weigh tickets, and the information that needs to be written on the envelope.

Note the envelope is bundle #1 and contains 38 weigh tickets as indicated by the numbers, plus an additional 2 extra tickets as shown in the remarks section.

Review Questions

Read each question and all the answers, then circle the best response:

1. The three mandatory safety items required for the Road Checker are :

    A. Hard Hat ; Lunch ; and Boots.
    B. Hard Hat ; Hi – Viz vest and Safety Boots.
    C. Hard Hat ; Water Bottle and Coveralls.
    D. Hard Hat ; Vest and Measuring Device.

2. When in close location to a power line, the Checker must stand :

    A. 5 metres beside the truck.
    B. 10 metres in front of the truck.
    C. 50 metres back from the truck.
    D. 20 meteres back from the truck.

3. Why should the Checker not stand beside the truck when the box is raised?

    A. A hydraulic hose may burst covering the Checker with hot oil.
    B. The driver may throw something at the Checker.
    C. It doesn't matter where the Checker stands.
    D. The shovel on the side of the truck may come loose and strike the Checker.

4. When should the Checker collect the weigh ticket from the truck driver?

    A. As the truck is backing up.
    B. Just before the truck pulls away.
    C. When the truck has stopped, before it begins to spread its load.
    D. As the truck driver is raising the box.

5. On a base / sub-base operation, what is the preferred practice to measure the distance that a load is to be spread?

    A. Pace off the distance with long strides.
    B. Use an odometer wheel.
    C. Eye ball the distance and use a landmark.
    D. Count the number of revolutions of the truck wheels.

Review Questions (con't)

6. When is the truck driver allowed to raise the truck box?

    A. Only when the truck is stopped and the Checker is positioned to the rear of the unit.
    B. As the truck is backing up into place.
    C. While the Checker is collecting the weigh ticket from the driver.
    D. While the Checker is walking back to the rear of the truck.

7. When is the Checker allowed to ride on the side of the truck?

    A. As the truck is moving back into position to unload.
    B. The Checker is never allowed to ride on the truck.
    C. As the truck pulls away so the Checker can get ready for the next truck.
    D. At the end of the day, to catch a ride back to their own vehicle.

8. What is meant by having an escape route when on the job site?

    A. A place to go when on your break.
    B. A place for a run-a-way truck to drive off the road.
    C. A way out for the truck driver to go if a situation arises.
    D. A way out for the Checker to go to, so as not to get trapped on the road surface in the event of an emergency.

9. How far back behind the truck should the Checker stand, when the truck is spreading?

    A. 20 metres.
    B. 1 – 3 metres.
    C. 5 – 7 metres.
    D. 30 metres.

10. When carrying out the Road Checker's duties, who is responsible for the safe actions required when on the job site?

    A. The Manager.
    B. The Road Checker.
    C. The Truck Driver.
    D. The Supervisor.

Review Questions (con't)

11. Who is responsible for maintaining the cleanliness of the scale house daily?

    A. The Supervisor.
    B. The Truck Driver.
    C. The Scale Operator.
    D. The Contractor.

12. At the start up of any job, if the scale house is not in a sanitary or safe condition :

    A. The scale operator must clean and repair the facility as required.
    B. The scale operator has the right to refuse to work in the facility.
    C. The scale operator can work in the conditions until the facility is cleaned or repaired.
    D. The scale operator does not need to do anything.

13. What is meant by the "tare" weight of a truck?

    A. The weight of an empty truck.
    B. The weight of a loaded truck.
    C. The weight of the load on the truck.
    D. The weight of how much the truck can haul.

14. Why should the exit of the scale house be located away from the scale deck?

    A. To prevent exhaust fumes from entering the scale house.
    B. To keep an angry truck driver farther away from the scale operator.
    C. So it is easier for the Supervisor or Contractor to enter the scale house.
    D. To ensure the scale operator has an exit / escape route away from the scale deck where the trucks are operating.

15. What must the scale have, that can be seen by the scale operator, before it can be used?

    A. Date of last cleaning.
    B. A valid certification sticker.
    C. The date of manufacture.
    D. A unit number sticker.

Road Checker Training Checklist

Checkers name : ______________________________________

Date of training : ______________________________

The following is to be completed by the Supervisor. Each item is to be checked off as the employee demonstrates or performs the task. All tasks must be performed in order to obtain minimum competency.

Task	**Yes**	**No**
- Wears Hard Hat; Hi-Viz vest & Safety Boots.	____	____
- Has necessary equipment (wheel, clipboard, etc)	____	____
- Stands in correct position waiting for truck to back up.	____	____
- Moves toward truck driver after truck has stopped.	____	____
- Takes ticket from driver and records weight.	____	____
- Measures distance for spread of load.	____	____
- Safely positioned back to rear of truck.	____	____
- Signals driver to raise box to required height.	____	____
- Motions driver to begin spreading of material.	____	____
- Stays in safe position as truck moves forward to spread.	____	____
- Is alert to other equipment / traffic.	____	____

Training conducted by : ______________________________

Remove this page from the module and when the training has been completed, forward this page to the Regional Training Coordinator.

Road Checker Training
(Temporary card)

____
(Name of employee)

Has successfully completed basic training in **Road Checker & Scale Operator** procedures.

__________________________ __________________
(Name of organization) (Date of Training)

____
(Trained by)

This temporary card is valid until the employee receives the final, laminated card, once the documentation has been processed.

A-2 Minimum Haul Rate Enforcement Agreement (MHREA)

Saskatchewan
Highways and
Transportation

MINIMUM HAUL RATE ENFORCEMENT AGREEMENT

Effective the 27th day of August, 1991.

BETWEEN:

HER MAJESTY THE QUEEN IN RIGHT OF THE
PROVINCE OF SASKATCHEWAN as represented
by the Minister of Highways and Transportation
(hereinafter called the "Department")

- and -

THE SASKATCHEWAN TRUCKING ASSOCIATION
as represented by the Gravel Hauler's Conference
(hereinafter called "S.T.A.")

- and -

EACH PERSON OR CORPORATION (each of whom or which is
hereinafter called "the contractor") who or which
enters into a construction contract.

WHEREAS:

A. The Department is responsible for the construction and maintenance of provincial highways in the Province of Saskatchewan.

B. The maintenance of a viable trucking industry to support the roadbuilding industry in Saskatchewan is in the public interest.

C. An enforceable system of minimum haul rates and minimum haul quantities for independent truckers is desirable to promote fairness and equity in the hauling of roadbuilding materials.

In consideration of the mutual covenants and agreements contained herein and in the construction contract and subject to the terms and conditions hereinafter set out, the Department, the S.T.A. and each contractor agree as follows:

Article 1 - Definitions

1.01 If not otherwise defined in this agreement, all terms shall have the same meaning as defined in General Provision 1000-2 of the Department construction contract.

1.02 "Construction contract" means a contract between the Department and the contractor or between the contractor and a subcontractor which stipulates that the contractor or subcontractor, as the case may be, agrees by his acceptance and execution of the contract to be a party to and bound by the terms and conditions of this agreement as if this agreement were a part of the contract.

1.03 "Department construction contract" means the construction contract between the Department and the contractor.

1.04 "Person" includes a corporation and the heirs, executors and administrators or other legal representatives of a person.

1.05 "Related persons" or persons related to each other are:

- (a) individuals connected by blood relationship, marriage or adoption;
- (b) a corporation and
  - (i) a person who controls the corporation, if it is controlled by one person,
  - (ii) a person who is a member of a related group that controls the corporation, or
  - (iii) any person related to a person described by subparagraph (i) or (ii);
- (c) any two corporations
  - (i) if they are controlled by the same person or group of persons,
  - (ii) if each of the corporations is controlled by one person and the person who controls one of the corporations is related to the person who controls the other corporation,
  - (iii) if one of the corporations is controlled by one person and that person is related to any member of a related group that controls the other corporation,
  - (iv) if one of the corporations is controlled by one person and that person is related to each member of an unrelated group that controls the other corporation,
  - (v) if any member of a related group that controls one of the corporations is related to each member of an unrelated group that controls the other corporation, or
  - (vi) if each member of an unrelated group that controls one of the corporations is related to at least one member of an unrelated group that controls the other corporation.

1.06 For the purpose of this agreement:

- (a) persons are connected by blood relationship of one is the child or other descendant of the other or one is the brother or sister of the other;
- (b) persons are connected by marriage if one is married to the other or to a person who is so connected by blood relationship to the other;
- (c) persons are connected by adoption if one has been adopted, either legally or in fact, as the child of the other or as the child of a person who is so connected by blood relationship (otherwise than as a brother or sister) to the other; and
- (d) each other word or phrase used in this section shall have the same meaning as would be ascribed to the word or phrase as it is used in section 251 of the Income Tax Act, S.C. 1972.

1.07 "Minimum haul rates" means the minimum haul rates specified in the special provisions of the construction contract.

1.08 "Independent trucker" means a person at arm's length from the contractor to whom the contractor subcontracts the haul of materials.

Article 2 - Minimum Rates and Hauls

2.01 In respect of Department construction contracts for which the tender documents specify an estimated quantity measured in tonne-kilometres or cubic metre-kilometres of material to be hauled, the contractor shall subcontract to independent truckers the hauling of not less than 40% of the estimated quantity measured in tonne-kilometres or cubic metre-kilometres of material to be hauled.

2.02 In respect of Department construction contracts for which the tender documents do not specify an estimated quantity of material to be hauled, the contractor shall subcontract to independent truckers the hauling of not less than 40% of the final quantity measured in tonne-kilometres or cubic metre-kilometres of material hauled.

2.03 In all subcontracts with independent truckers, the contractor shall agree to pay the independent truckers not less than the minimum haul rates stipulated in the special provisions of the Department construction contract without set off, rebate or deduction except in respect of set offs or deductions for trailer rental, fuel, food and accommodation and other goods and services provided to the trucker by the contractor and in accordance with the provisions of the Department construction contract.

Article 3 - Independent trucking contracts

3.01 The contractor shall ensure that all subcontracts with independent truckers shall be substantially in the form attached, properly completed and specifying rates for the hauling of material, signed in triplicate prior to the independent trucker commencing the haul, one copy of which shall be provided to the independent trucker, the second copy of which shall be delivered to the Engineer prior to the independent trucker commencing the haul and the third copy retained by the contractor.

3.02 The contractor shall not consent to or allow assignment by an independent trucker of any subcontract for the hauling of material.

3.03 Notwithstanding General Provision 1700-1 of the Department construction contract, the contractor may subcontract the hauling of material to independent truckers without the approval of the Engineer or the consent of the Minister.

3.04 Subject to General Provision 1700-1 of the Department construction contract, the contractor may subcontract portions of the work which include the hauling of materials provided that the contractor complies with sections 2.01 and 2.02 by:

(a) directly subcontracting the required portion of the hauling of materials to independent truckers;

(b) requiring subcontractors who perform the hauling of materials to further subcontract some or all of the hauling of materials to independent truckers; or

(c) a combination of both (a) and (b).

3.05 If the contractor requires subcontractors to further subcontract the hauling of materials to independent truckers, the subcontract must stipulate that the subcontractor agrees by his acceptance and execution of the subcontract to be a party to and bound by the terms and conditions of the Minimum Haul Rate Enforcement Agreement between Her Majesty the Queen in Right of the Province of Saskatchewan as represented by the Minister of Highways and Transportation and the S.T.A. as if the Minimum Haul Rate Enforcement Agreement were a part of the subcontract and all of the provisions of this contract and of the Department construction contract shall apply _mutatis mutandis_.

3.06 No independent trucker shall supply more than four trucks to a contractor on any project.

Article 4 - Limitations on the Department's Obligation to pay for the Hauling of Materials

4.01 Notwithstanding any provision of the Department construction contract to the contrary the Department shall be obligated to pay at the tendered rates only in respect of the following:

(a) the hauling of all material in excess of 40% of the estimated quantity, plus

(b) the hauling of all material which is done by independent truckers with whom the contractor has signed an agreement and provided a copy to the Engineer in compliance with section 3.01.

4.02 Notwithstanding section 4.01, the Department shall pay at the tendered rates for the hauling of that portion of the material in respect of which the contractor was unable to hire independent truckers.

4.03 For the purpose of section 4.02, the contractor shall be deemed to have been unable to hire independent truckers if the contractor provides to the Department a statutory declaration that he:

(a) contacted not less than three independent truckers and offered the hauling to them;

(b) advised the S.T.A. of his desire to hire independent truckers; and

(c) received no offers from any independent truckers to haul the material prior to or within two calendar days after notifying the S.T.A.

4.04 The statutory declaration shall be provided to the Department within seven days of the date the contractor advised the S.T.A. of his desire to hire independent truckers.

4.05 The contractor shall not be deemed to have been unable to hire independent truckers if the hauling offered to them is not reasonably representative of the hauling being performed by the contractor at the time.

4.06 The contractor shall not be required to accept offers from independent truckers who are unable to commence hauling within two calendar days from the time the independent trucker offers to perform the haul.

4.07 Article 4.02 shall not relieve the contractor from the obligation to enter into independent trucking agreements pursuant to Article 3.01 with all independent truckers who offer to perform the haul prior to the expiration of the two calendar days after notifying S.T.A. pursuant to 4.03.

Article 5 - Non-Arm's Length Relationships Prohibited

5.01 For the purpose of this agreement:
- (a) related persons shall be deemed not to deal with each other at arm's length; and
- (b) a person who has any contractual relationship with the contractor between April 1 and October 31 of each year (during the term of this contract), other than as an independent trucker, shall be deemed not to deal with the contractor at arm's length.

5.02 Without limiting the generality of section 5.01(b), the following are examples of contractual relationships which will result in the persons being deemed not to deal with each other at arm's length:
- (a) employer-employee relationships,
- (b) arrangements for the sale and purchase or lease of any property, including vehicles,
- (c) arrangements for the provision of any other service to the contractor, such as supplying a loader or crushing aggregate,
- (d) arrangements to make less than full payment pursuant to the independent trucking contract or for the contractor to receive any benefit from the trucker other than the hauling of materials and payment for goods and services provided to the trucker in accordance with an agreement signed pursuant to section 3.01.

5.03 For the purpose of section 5.01(b), contractual relationships include both verbal and written agreements.

Article 6 - Complaints

6.01 The S.T.A. is a party to this agreement as an agent of independent truckers.

6.02 Where the S.T.A. has reason to believe by reason of a complaint made to it or otherwise that a contractor has not complied with the provisions of this Agreement respecting the payment of minimum haul rates, the S.T.A. will:
- (a) make appropriate inquiries to obtain explanations of the matter;
- (b) to investigate with reasonable diligence such complaints which are not satisfactorily explained;
- (c) if possible, to facilitate a resolution of any matters in dispute; and
- (d) where it deems it appropriate, submit the matter for arbitration pursuant to Article 7.

Article 7 - Arbitration

7.01 Any question regarding non-compliance with the provisions of this agreement respecting payment of minimum haul rates may be submitted by any party to binding arbitration by a single arbitrator to which the provisions of The Arbitration Act, R.S.S. c.A-24, shall apply except as otherwise provided in this agreement.

7.02 A notice of intention to arbitrate must be served on the Department not later than 60 days after the Engineer has given notice of final acceptance pursuant to General Provision 1400-10(2) of the Department construction contract and the notice must be served within the same time upon the contractor and anyone intended to be made a party to the arbitration.

7.03 If notice of intention to arbitrate is not served on the contractor pursuant to 7.02, the right to arbitration shall terminate without prejudice to any other rights which the independent trucker may have.

7.04 All arbitrations shall be conducted in Regina unless otherwise agreed.

7.05 In the event it is necessary to have an arbitrator appointed pursuant to section 6 of The Arbitration Act, the contractor and the S.T.A. agree to pay a reasonable fee to the arbitrator which may be fixed by a Judge of the Court of Queen's Bench either before or after the arbitration.

7.06 In deciding any submission, the arbitrator may make any order which the arbitrator considers just and equitable, and without limiting the generality of the foregoing may:

(a) order payment by the contractor to the S.T.A, as agent for each independent trucker, of any sum which should have been paid by the contractor for the contractor to comply with either the Department construction contract or the subcontract with the independent trucker;

(b) order that any party to the arbitration pay any portion of the cost of the arbitration or order any party to the arbitration to pay any portion of the costs incurred by any other party to the arbitration; and

(c) order payment of interest on any sum awarded from the date such payment should have been made.

7.07 The award of the arbitrator may be appealed to a Judge of the Court of Queen's Bench on a question of law only.

7.08 An appeal must be commenced within 30 days from the date on which the decision of the arbitrator is sent to each party by registered mail.

7.9 After the expiry of the time for appeal, or if an appeal is taken, after the making of a final judgment from which no further appeal may be taken, the Department may pay to the S.T.A. from any money owing to the contractor the amount of any award against the contractor and the contractor accepts such payment in satisfaction of the Department's obligation to make payment to the contractor.

Article 8 - Exclusions

8.01 This agreement does not apply to and does not form part of Department construction contracts:
- (a) for seal coating only;
- (b) for grading involving the placement of select material only;
- (c) if the estimated quantity of material to be hauled is less than 500 000 tonne-kilometres; or
- (d) in which there is no estimated quantity if the special provisions expressly exclude the application of this agreement.

8.02 The provisions of this agreement do not apply:
- (a) to the hauling of material after October 31 in one year and before April 1 in the succeeding year (hereinafter called "the winter haul"); or
- (b) to the hauling of material after March 31 if less than 50 000 tonne-kilometres is carried over from the winter haul.

IN WITNESS WHEREOF this agreement was signed and sealed to be effective as of the day first above written.

THE DEPARTMENT OF HIGHWAYS
AND TRANSPORTATION

Per:____________________
Acting Deputy Minister

THE SASKATCHEWAN TRUCKING ASSOCIATION

Per:____________________

Per:____________________

A-3 Third party claims

Saskatchewan
Highways and
Transportation

CM 307-01

Construction Manual

Section: CLAIMS

Subject: THIRD PARTY CLAIMS POLICY

INTRODUCTION

On occasion, third parties who supply labour, goods and services in the performance of the work may not be fully compensated by the contractor;or third parties may incur damages or bodily injury due to the contractors prosecution of the work. The third party frequently contacts the Department directly for assistance to resolve the matter. This policy outlines the process to be used for handling third party claims.

POLICY

The Department involvement in settlement of third party claims is limited to withholding an equivalent amount from payments to the contractor.

It is the Contractors responsibility to pay for all labour expended, services given, and materials and supplies used in construction of the work. This includes subcontractors and consultants (General Provision 1900-5).

The Contractor shall indemnify the Department from all actions brought because of injuries or damages received on account of the operation of the Contractor in constructing the work (General Provisions 1600-5).

Third party claims shall be recorded in a central registry. Investigation of the claim shall be limited to confirmation that the work was correctly identified under contract or that the incident occurred at a location under the contractors control. Claims shall then be forwarded to the contractor with copies to the surety or liability insurance agent. An acknowledgement letter shall be sent to the claimant.

Third party claims shall categorized as surety claims or liability claims.

Saskatchewan
Highways and
Transportation

CM 307-02

Construction Manual

Section: CLAIMS

Subject: THIRD PARTY CLAIMS
SURETY RELATED

INTRODUCTION

Surety claims are those related to the provision of labour, equipment and supplies to the contractor for the prosecution of the work. These matters are normally covered by the contractors indemnity bond. Equivalent funds shall be withheld from the final payment for a period of 90 days after which the surety will be requested to take action to resolve the issue.

PROCEDURE

Surety related third party claims are those claims for labour expended, services given and materials and supplies used in the construction of the work as described and covered by the indemnity bond. Some common examples are pit extraction fees, fuel supplier bills, subcontractor payments, equipment rentals and wages.

1. Only written and signed third party claims will be recognized.
   Confirm that the labour or materials were provide to the
   contractor. If it is uncertain that they were not provided, forward the claim to the Director Engineering Projects for further handling.

2. Record the claim in a central registry.

2. Acknowledge the claim by letter and include the following details to the claimant:
   - name of the person who signed the contract
   - contractors name, business address and telephone number
   - indemnity bond number and face amount
   - name of the person who signed the bond
   - surety name and business address

   The letter will be sent out by the Director Engineering Projects with copies to the Contractor, Surety and Contracts Administrator.

3. A copy of the acknowledgement letter and claim shall be sent to the contractor by transmittal letter. This letter will be sent out by the Director Engineering Projects with copies to the claimant, Surety and Contracts Administrator.

4. At the expiration of 90 days the status of the claim shall be confirmed. If little or no action has been taken, the surety shall be notified to undertake its obligations of the surety bond to ensure prompt payment is made to the contractors creditors. This

letter will be sent out by the Director Engineering Projects with copies to the claimant, Surety and Contracts Administrator.

5. Certificates of Judgement from Small Claims Court shall be recognized. The "losing" party has 30 days in which to file a Notice of Intention to appeal the decision to the Court of Queen's Bench. If there is no appeal, the Certificate of Judgement is enforceable and the withheld funds shall be distributed in accordance with the judgement. If the decision is appealed, the party has to file a transcript of evidence within 6 months with the Court of Queen's Bench. Claims involving Court of Queen's Bench shall be discussed with the Department of Justice Crown Solicitor regarding the withholding of funds in each individual case.

6. Sample letters are provided for reference:

   Sample letter 1 - acknowledgement of claim.
   Sample letter 2 - transmittal of the claim to the contractor.
   Sample letter 3 - letter to surety if the claim is not resolved 90 days after final estimate approved.

Surety Related Claim
Sample Letter No. 1 Acknowledgement Letter

Dear Sir:

File: Contract No.

I acknowledge receipt of your letter of *(date)* in which you are making a claim against *(ABC Construction Ltd)* under contract with Saskatchewan Highways and Transportation. Our contract with *(ABC Construction Ltd)* says in part that the contractor shall ensure that prompt payment is made for labour expended, services given and materials and supplies used in or about the construction of the work.

Your claim shall be recorded and, if it remains unresolved upon completion of the contract, an equivalent amount will be withheld from the contractors final payment.

The Departments involvement in the settlement of the claims is limited to withholding of the claim amount. Each individual is responsible for pursuing settlement of their claim through contact with *(ABC Construction Ltd)* or its surety company or by taking those actions at law that are available.

I am forwarding your letter to *(ABC Construction Ltd)* for their attention. You may contact them directly as follows:

Name of person signing Memorandum of Agreement
Company name from Memorandum of Agreement
Address from Memorandum of Agreement
Telephone No. from Memorandum of Agreement.

In addition, you may wish to contact the surety company who has provided the Department with Indemnity Bond No. _______ in the amount of $_______ to cover claims for failure of the contractor to perform the contract within its terms. You may contact them directly as follows:

Surety name
Surety address
Name of Surety Manager

We are interested in the outcome of this claim. Please feel free to contact me at (306) xxx-xxxx at the _______ District Office if you wish to discuss this matter.

Yours truly
Director Engineering Projects
cc: - *ABC Construction Ltd.*
- *XYZ Surety Ltd.*
- Technical Standards and Policies Branch, Contracts Administrator

Sample Letter No. 2
Surety Related Claim - Sending Claim to Contractor

File: Contract No.

Dear Sir:

Re: Our Contract No. _____
Third-Party Claim - *John Doe Complainant*

Attached is a letter from *(John Doe Complainant)* claiming that the amount of $_______ is owed them by your company in respect of the construction of the work on Contract No. _ .

This letter is being considered as a third-party claim against your contract and indemnity bond supplied by your surety. A copy of this letter and the claim is being forwarded to your surety for their information at this time.

An amount equal to the claim will be withheld from the final payment on this contract until you supply satisfactory evidence that it has been settled.

If the claim remains unresolved 90 days after approval of the final payment, the matter shall be referred to your surety for handling in accordance with the requirements of the Indemnity Bond.

I refer you to General Provision 1900-5 specifically concerning prompt payment for labour, services and materials used in construction of the work and request your immediate attention to this matter.

Yours truly

Director Engineering Projects

Attachment

cc: - *John Doe Complainant*
- *XYZ Surety Ltd.*
- Technical Standards and Policies Branch Contracts Administrator

Sample Letter No. 3
Surety Related Claim - Sending Claim To Surety

File: Contract No.
ABC Construction Ltd.

Dear Sir:

Re: Indemnity Bond No. __________ for
ABC Construction Ltd., Contract No. ______
Third-party Claim by *Joe Doe Complainant*

Further to copies of letters sent to you concerning the third party claim against *ABC Construction Ltd.* in the amount of $_______, the matter is still unresolved.

The present status of contract holdback is:
Total contract value $_____________
Total amount paid to contractor $________
Amount of holdback $______________

The Department intends to draw upon the obligations of the contract bond to fulfil the contract covenants and clauses. Your immediate attention to this matter is requested.

If you wish to discuss this matter further, please call me at (306) ###-####.

Yours truly,

Director Engineering Projects

c: Technical Standards and Policies Branch Contracts Administrator
ABC Construction Ltd.

Saskatchewan
Highways and
Transportation

CM 307-03

Construction Manual

Section: **CLAIMS**

Subject: **THIRD PARTY CLAIMS LIABILITY RELATED**

INTRODUCTION

Liability claims are those related to damages or bodily injury incurred as a result of actions or inaction of the contractor in the prosecution of the work. These matters are normally covered by the contractors liability insurance. Equivalent funds shall be withheld from the final payment for a period up to one year after approval of the final estimate after which time the funds will be released to the Contractor. Claims greater than 1,000 shall be forwarded to the liability insurance company.

PROCEDURE

Liability related third party claims are those claims for property damages or bodily injury as a result of actions or inaction by the contractor and covered by the liability insurance. Some common examples are windshield damages or asphalt on vehicles when passing through a work zone.

1. Only written and signed third party claims are recognized. Confirm that the damages occurred in the location under control of the contractor. If the damages did not occur in such location, forward the claim to the Director Engineering Projects for further handling.

2. Record the claim in a central registry.

3. Acknowledge the claim by letter and include the following details to the claimant:
    - name of the person who signed the contract
    - contractors name, business address and telephone number
    - if the claim is $1,000 or greater include the name of the liability insurance company as indicated on the certificate of insurance. This information can be obtained from Technical Standards and Policies Branch, Contracts Administrator.

   The letter shall be sent out by the Director Engineering Projects with copies to the Contractor, Contracts Administrator , and liability insurer if the exceeds $1000.

3. Transmit the claim to the contractor. Indicate that if the claim is not resolved at the time of the final estimate an equal amount may be withheld from the final payment. The amount will be withheld for a period of 1 year to encourage negotiation of a settlement. The letter shall be sent out by the Director Engineering Projects

with copies to the claimant, Contracts Administrator , and liability insurer if the claim exceeds $1000.

4. If the claim is unresolved at the end of 1 year after the final payment to the contractor notify the claimant that funds withheld from the contractors final payment will be released to the contractor in 60 days. Advise the claimant that if action is initiated at Small Claims Court or Court of Queen's Bench, the Department may continue to hold the funds until results of the action.

5. Claims from lawyers for damages on behalf of clients may not generate withholding of an equivalent sum for the damages as, in most cases, no sum is given and the complainant has taken the action to recover damages.

8. Sample letters are provided for reference:
   Sample letter 1 - acknowledgement of claim.
   Sample letter 2 - transmittal of claim to the contractor.
   Sample letter 3 - letter to claimant giving notice that the holdback will be released to the contractor in 60 days.

Liability Related Claim
Sample Letter No. 1 Acknowledgement Letter

File: Contract No:

Dear Sir:

I have received your letter of (*Date*) about an (*accident, windshield damages, etc.*) which occurred on Highway No. ( ) approximately (*location from claim*).

The section of highway where the accident occurred is being constructed by (*ABC Construction Ltd.*) of (*City/Town*). Our contract with (*ABC Construction Ltd.*) states, in part, that the contractor is responsible for damages or injury sustained on account of construction of the work.

Your claim shall be recorded and, if it remains unresolved upon completion of the contract, an equivalent amount will be withheld from the contractors final payment. This amount shall continue to be withheld for a period of 1 year in an effort to encourage settlement.

If the claim remains unresolved at the end of 1 year the Department will advise you of its intent to release the withheld amount to (*ABC Construction Ltd*) 60 days prior to the release date.

The Departments involvement in the settlement of the claim is limited to withholding of the claim amount. Each individual is responsible for pursuing settlement of their claim through contact with (*ABC Construction Ltd*) or by taking those actions at law that are available.

I am forwarding your letter for their immediate attention.
(*ABC Construction Ltd.*) may be contacted as follows:

(*ABC Construction Ltd.*)
(Address as per contract)
Attention: (Name of person signing contract).

*

For your additional information the insurance company who has provided (*ABC Construction Ltd.*) with their liability insurance is:

(*Liability Insurance Company*)

(*Address as per Certificate of Insurance*)

The Department is interested in the outcome of this matter. Please feel free to contact me at (*Phone No.*) at (*City*) District office if you wish to discuss this matter further.

Yours truly,

Director Engineering Projects

cc: *Contractor*
Technical Standards and Policies Br. Contracts Administrator
* *Liability Insurance Co.*
* Delete for claims less than $1,000

Liability Related Claim
Sample Letter No. 2 Sending Claim to Contractor

File: Contract No.

Dear Sir:

Re: Our Contract No.________
Third-Party Claim: *John Doe Complainant*

Attached is a letter from __________________
claiming damages and personal injury in an accident on Hwy.
No._____. The accident occurred on that portion of Hwy. No._____ being constructed by your company under contract No._______.

In accordance with General Provision 1600-5 the contractor shall indemnify and save harmless the Minister from actions brought because of injuries or damages received on account of the prosecution of the work.

The attached correspondence is considered a liability related third part claim against your contract and liability insurance. In accordance with the department policy to encourage settlement the claim amount may be withheld for a period not exceeding one year after the final payment for the work.

* A copy of this letter and the claim is being sent to your liability insurer for their information and action.

Your immediately attention to this matter is requested.

Yours truly,

Director Engineering Projects

c: *John Doe Complainant*
Technical Standards and Policies Br. Contracts Administrator
* *Liability Insurance Co.*

* Delete for claims less than $1,000

Liability Related Claim
Sample letter 3 - Notice of Release of Holdback

File: Contract No.

Dear:

Our records show that on (date), 19 , you made a claim for damages to in the amount of $, while travelling on Highway No. which was under construction by (*ABC Construction Ltd.*) of (*City/Town*). Under the present policy the Department withheld an equal amount to your claim from the final payment to (*ABC Construction Ltd.*) in an effort to expedite and encourage settlement.

The Department feels there has been sufficient time and opportunity for resolution of the claim. Continuing to withhold funds any longer would not appear to serve any purpose in resolving the claim. As a result, the Department will be releasing the withheld amount to (*ABC Construction Ltd.*) 60 days after the date of this letter.

The Department's involvement in the settlement of the claim is limited to the withholding of the claim amount as outlined above. Each individual claimant is responsible for pursuing settlement of their claim through contact with (*ABC Construction Ltd.*) or any formal action at law that may be available.

If you have initiated or intend to initiate action at law the Department will consider extending the period of withholding the funds based on a formal court appearance date. Please provide me with the details by calling (306) 787-xxxx in Regina.

Yours truly,

Contracts Administrator

c: Director Engineering Projects

Appendix B Alberta Transportation

B-1 Draft Report on Automated Truck Haul

AN AUTOMATED SYSTEM FOR TRACKING THE HAUL OF CONSTRUCTION MATERIALS

Jim Gavin, P.Eng.
Allan Lo, P.Eng.
Alan Humphries, P.Eng., PhD.

Alberta Transportation

Paper prepared for presentation
at the Maintenance and Construction Session
of the 2004 Annual Conference of the Transportation Association of Canada
Québec City, Québec

Draft Report

Abstract:

Alberta Transportation is responsible for managing the construction, maintenance and operation activities on approximately 25,000 kilometres of paved highways. On an annual basis over 3 million tonnes of Asphalt Concrete Pavement (ACP) and 4 million tonnes of Granular Base Course (GBC) aggregates are weighed and hauled for highway construction and rehabilitation activities. The construction process is 100% out-sourced with engineering consultants undertaking the design and contract administration duties while the construction activities are awarded to contractors based upon low bid tender.

The present measurement/payment process involves the loading and weighing of gravel trucks at the aggregate pit or asphalt plant by the contractor; manual recording of the haul loads by the consultant's scale person and manual recording by the consultant's road checker upon delivery of the load. The scale sheet is collected by the project manager on a daily basis, totaled and verified against the road checker's book. The same haul data is taken by the contractor and resorted in order to provide payment to the individual truckers. In many cases the consultant and contractor each enters the same data into separate spreadsheet programs. While the present process works adequately there are obvious opportunities for improvement in regards to eliminating contractor/consultant redundancies and with the speed of data collection and reporting.

This paper describes how modern information and communication technologies were used to develop the Automated Truck Haul (ATH) system and the results obtained from a highway paving project where the system was piloted. The ATH system consists of a scale-mounted computer that is used to electronically capture the ACP load data and transmit that data via satellite to a centrally located server. The same data is also transmitted to a GPS equipped PDA computer at the paving site where the road checker automatically captures the time and location of unloading. The unload data is then transmitted to the central server in "near real-time" conditions. Through an internet connection the data is accessible to the project consultant, contractor and the department's regional staff.

Results from the ATH pilot project confirm that cost savings are achievable, mainly through the elimination of the consultant's scale person. Other cost savings and efficiencies were also identified in that the time spend on manual data entry and report generation was greatly reduced.

1.0 Introduction

Alberta Transportation (AT) is responsible for managing the construction, maintenance and operation activities on approximately 25,000 kilometres of paved highways. Prior to 1995 the department used its own staff for the activities related to highway planning, design and construction administration. In 1995 a series of re-engineering initiatives were undertaken looking at the various activities and processes used by the Department. Two of these initiatives were directed to review the process of highway planning and design "Design Projects" and highway construction "Construct Projects". A major outcome from these re-engineering initiatives was the 100% outsourcing of project level design and construction administration duties to pre-qualified engineering consultants (1). No significant changes were made to the procedures used for the actual construction activities. This work continues to be awarded to contractors based upon low bid tender.

Alberta Transportation is proud of its record as an innovative organization. The department is continuously seeking ways to improve its practices and processes. Examples of this are the introduction of an End Product Specification for asphalt concrete pavement approximately 15 years ago, and the introduction of Managed Quality Assurance practices. More recently, the department has established a vision to be "A Centre of Excellence in Transportation in North America". One of the pillars for achieving this vision is by being an early adopter of affordable technology that improves the quality and effectiveness of our services and programs.

Alberta Transportation's success in implementing innovative ideas has been due, in part, to the enviable partnership the department has developed with the Alberta Roadbuilders and Heavy Construction Association (ARHCA) and the Consulting Engineers of Alberta (CEA). It is through this collaborative and consultative tri-party relationship that ideas can be brought to the table; examined, debated and challenged from all perspectives; to ultimately create a situation where the opportunity is maximized to the benefit of all parties. The automated system for tracking the haul of construction materials is a prime example of where all three parties contributed to the concept and trial, and all three parties stand to gain significant ongoing benefits.

1.1 Present Measurement System

On an annual basis over 3 million tonnes of Asphalt Concrete Pavement (ACP) and 4 million tonnes of Granular Base Course (GBC) aggregates are weighed and hauled for highway construction and rehabilitation activities. This work includes both new construction and rehabilitative overlays with and without grade widening. In a typical year 40 to 50 contracts are awarded with over 90% of the work spread among nine main contractors. An average paving project would consist of 60,000 tonnes of ACP material but this varies widely, anywhere from 10,000 to 200,000 tonnes.

Most of AT paving projects are completed using mobile drum mixing plants that are set up in the gravel pit or occasionally at an interim stockpile site. In all cases the contractor is responsible for supplying the certified scale and loading the haul trucks. The loading is done by either the plant operator or in some cases the contractor hires a scale person whose duties are separate from that of the plant operator and the scale person hired by the consultant (who verifies that net weight is correct and manually records). In this report the contractor's employee responsible for loading the haul trucks will be referred to as the load operator. In most cases the platform scale is situated directly under the loading silo, however on some projects the contractor elects to set the scale up at some other location within the pit. A variety of scale types from different manufacturers are in use, but all use load cell technology versus the mechanical beam style of older systems.

Once the truck is loaded a scale person that is hired by the consultant manually records the load information onto both the scale summary sheet and a truck haul card that is given to the driver. In this report, unless otherwise stated, the term scale person will refer to the person hired by the consultant to record for payment purposes the net haul information. Upon arrival to the road the truck driver radios the load weight to the road checker (hired by the consultant) who then records the information into a checker's book. Note, for safety reasons, the department stipulates that the road checker is to remain off the road surface and not approach the haul trucks or construction equipment.

The scale sheet is collected by the consultant's project manager on a daily basis, totaled and verified against the road checker's book. Payment is then provided to the contractor, usually on a per tonne measurement basis, i.e. no separate payment for haul. The contractor takes the same data and provides payments to the individual truckers, either on a per tonne or tonne·km basis. In some cases the consultant and contractor each enters the same data into separate spreadsheet programs. The present system, with only minor changes, has worked adequately for decades however there are obvious opportunities for improvement in regards to eliminating contractor/consultant redundancies and with the speed of data collection and reporting.

2.0 Past Investigations

2.1 Automated System using Radio Frequency Identification Technology

In 1993 the Research and Development Branch of Alberta Transportation coordinated a trial project (2) using Radio Frequency Identification (RFID) technology as a basis to automate the collection and storage of truck haul data on a paving project. On this project an electronic tag, also known as a transponder, was installed onto each truck. Each tag was assigned a unique identification number and was able to transmit, receive and store up to 8 kilobytes of information. The haul data was semi-automatically captured at the weight scale and stored onto the hard drive of a PC computer. It was not a completely automated system as a scale person was still required to monitor the loading process and made several manual entries and checks. A handheld portable reader was used by the checker on the road to communicate with the individual electronic tags. The kilometre station for unloading was manually entered by the road checker into the portable reader. The data from the handheld unit and the data from the scale house PC (copied onto a floppy disk) were then transferred to a field office computer.

While this system was able to collect data as designed a number of technical problems and limitations resulted in no further system development. Some of these problems and limitations included:

- No reduction in engineering staff costs. A scale checker and road checker was still required to enter data.
- Data capture at the scale was not always accurate. Problems were encountered with wind affecting the capture of tare weights. Also there were instances where the weigh data on the electronic tags was not updated properly and entries from the previous day continued to be used.

- Concerns were expressed about the security of the haul data as it was believed that the data could be potentially altered between leaving the scale house and being received on the road.

2.2 Feasibility Study for Developing an Automated Truck Haul System

In 2000 the Technical Standards Branch of Alberta Transportation hired Stantec Consulting Ltd. to undertake a feasibility study (3) on the use of information technology for automating the collection of truck haul data. The objectives of the study were:

- Canvas other highway agencies and report on the current state-of-practice in regards to using such technology.

- Undertake a technology scan and outline different information technologies or system approaches for the potential development of an automated truck haul system. A summary of costs and issues associated with implementing each alternative was also to be provided.

The survey results from other agencies indicated that no other agency was using a completely automated system where the truck haul data was automatically captured both at the mixing plant and at the road site. A few agencies reported using an automatic truck scale where the weigh data is electronically captured and weight tickets are automatically generated.

The feasibility study provided a general description of various communication and information technologies including, RFID, Global Satellite Positioning (GPS), smart cards, wireless communication, bar coding, automated ticket printers and hand held personal computers. While a number of different technologies were described as being feasible, no one integrated system was recommended for further evaluation.

3.0 Development of Automated Truck Haul System

In order to develop a prototype system an Edmonton based company, Truckbase Corporation, was invited to review the department's business needs and submit a proposal on automating the collection of truck haul data. This company has done previous work for the department (4) in developing a web based system for monitoring the location and actions of snow plow trucks using GPS technology. When preparing their proposal Truckbase was encouraged to interview a number of local paving contractors to review in detail their operating procedures and type of equipment used (mixing plant, weigh scale, haul trucks, pavers, etc.). The department was interested in receiving a proposal where Truckbase had received concurrence from a paving company to partner on an existing contract towards evaluating a prototype system.

On this trial project the department would be responsible for all costs associated with developing the automated system while the volunteer contractor would be willing to let Truckbase do the necessary equipment modifications and installations without requesting any extra work charges.

3.1 Trial Project Location

The chosen trial project was a combined grade widening and pavement overlay on Highway 18, west of Westlock, which is approximately 90 km north of Edmonton. The project was 18.8 km in length and consisted of 35,195 tonnes of a Type 2 asphalt concrete mix. A separate bid item was also included for 500 tonnes of Type 2 mix to be supplied as Asphalt Mix for Others, i.e. material that is picked up at the mixing plant by the local maintenance area contractor. Granular base course aggregate was also to be supplied as part of the grade widening activities however automating the measurement and tracking of this material was not included as part of this evaluation. The contractor for this project was E Construction Ltd. while the consultant was Al-Terra Engineering, both are based in Edmonton.

On this project the contractor's drum mixing plant was situated at the gravel source located near Fort Assiniboine resulting in a dead haul of approximately 60 kilometres. Loading of the haul trucks was done by the load operator (in this case a scale person hired by the contractor) while a second scale person, hired by the consultant, was responsible for recording the time, truck number and net load. The contractor used an above ground platform scale containing a DS 1000 electronic scale head manufactured by Western Scales Inc. On a typical day the contractor would use 20 haul trucks that consisted of either bottom dump trailers (net load of approximately 30 tonnes) or bottom dump combination units consisting of a trailer and pup trailer (net loads of approximately 40 tonnes). The asphalt mix was dumped and windrowed onto the road surface where a pick-up unit would pick-up and transfer the mix to the hopper of the paver. A road checker that was hired by the consultant was recording the load deliveries. Paving of the road intersections and entrances was done using a smaller paving unit.

For this trial project no changes were made to the regular measurement procedures, i.e. the consultant still used scale summary sheets, haul cards and a road checker's book. The Automated Truck Haul (ATH) system was only used on a shadow or demonstration basis. The system developer supplied three engineering staff members (not all three used continuously) to setup, troubleshoot and operate the system. In the case of data entry at the scale house the load operator was able to operate the computer after a brief training period. The data collection on the road for the system was handled by one of the Truckbase employees (referred to as ATH road checker in the remainder of this report).

4.0 Description of Pilot System

The system developed for this pilot project consisted of the following equipment:

- Computer with satellite communication ability and auxiliary equipment at the scale house.
- Two hand held personal digital assistant (PDA) units. One was GPS equipped and the other was equipped for satellite communication.
- Off-site server located at the Truckbase office in Edmonton.

The equipment installation was done by Truckbase personnel while the contractor was mobilizing the plant and equipment to the project. No problems were encountered while installing this equipment.

A more complete description of the equipment used and how it operated is contained in the final report submitted by Truckbase (5) and further summarized as follows.

4.1 Scale House

A standard desk top computer with a 15 inch LCD monitor was connected to the scale head by means of serial port communications. The computer was a Pentium III running at 500 MHz with 128 of RAM and used the Windows 98SE operating system. The computer was pre-programmed at the beginning of the project to contain the identification and tare weight information for each truck to be used. New trucks that were brought on during the project could be easily entered into the system by the load operator. As the truck drove on the scale the load operator would enter the truck identification number and would select the type of weight information to be recorded, either *Gross* (default) or *Tare* if a new tare weight was desired. Once the truck was finishing loading the load operator would enter *Yes* and the truck number, net load weight, material type and time would be stored onto the hard drive. A load receipt would be printed for the truck driver using a small dot matrix printer.

The computer was linked to the Globalstar communications satellite network. After either a predetermined number of loads or set amount of time the stored data was transmitted to the satellite and then onwards via the internet to both the Truckbase home server and the PDA unit located on the paver. The upload interval used on this project was ten minutes. More frequent transmissions could be done however satellite transmission costs would be higher. All load transactions were stored on the scale house computer and could be transmitted at a later time if there were any satellite communication problems. An UPS (uninterrupted power supply) device was used to protect against power fluctuations and outages. A screen capture of the computer input screen is shown in Figure 1.

4.2 Paving Site

Located on the paver was a Panasonic Toughbook PDA unit which was also connected to the Globalstar communications satellite network. The unit was mounted inside a protective plastic case that was magnetically mounted to the paver. A simple plug-in connection allowed the unit to be powered from the paver. This unit served as a communications relay to both the checker's PDA via an 802.11b wireless connection and the Truckbase server via a Globalstar data modem.

A second Toughbook PDA was carried by the ATH road checker and featured an internal GPS module plus 802.11b wireless communications capability. Data entry could be performed through either a pen stylus or keyboard entry. A photo of the Panasonic Toughbook unit is shown in Figure 2.

Custom software was written for the PDA units and the user interface employs intuitive menu selection options. Well in advance of the loaded truck's arrival, the ATH road checker could view a list of incoming loads. Once a truck arrived the checker would select that truck using the pen stylus. The checker would mark the location of the load using either GPS coordinated that were automatically generated by the attached GPS receiver in the PDA unit. In cases where the load was delivered to some other location other than the paver, i.e. for mix placed on approaches or used as preliminary levelling, the checker could manually input the kilometre station with accompanying remarks. Information for lane direction, lift number and mat would default to previously entered values but could also be manually changed if required. The system was also programmed to provide on-going tonnage spread rate calculations in a separate report to the checker.

The load and unload data would be transmitted to the satellite and home base server at pre-determined intervals (usually every 10 minutes) or at any time the checker wanted an update. An example of the input screens for the portable PDA is shown in Figure 3.

4.3 Data Storage and Access

Both the load and unload haul data was sent to the Truckbase server through the Globalstar communications satellite network and the internet. The GPS coordinates were converted at the server to highway kilometres values corresponding to the linear referencing methodology used by Alberta Transportation. Access to the data was available via the internet to the contractor, consultant and the department. The security of the data was protected though a high security website using password protection and encryption technology. Physical protection of the data was also maintained through daily back ups to a secure off-site location.

Various administration rights were granted to the individual parties. The department was only given read access while the contractor was given read access for all data and update access to the truck management information. The consultant was given full access to all data.

Access to the data base was obtained by logging onto the Truckbase website and entering the appropriate username and password. A screen capture of the truck haul data as accessed through the internet is shown in Figure 4. On this screen the viewer could click on any of the column heading to sort the data in ascending or descending order. Also available from this screen is an "*Export to Excel*" button which would download the column headings and haul data for the selected contract into an Excel format file. The consultant and contractor could then take the data and resort or summarize to meet their needs.

5.0 Trial Project Findings

Paving on Hwy 18 started on September 23, 2003 and was finishing on October 6, 2003 for a total of 14 working days. The prototype ATH system was in operation for the full period. In general the ATH system did perform as expected however a number of problems, enhancements and outstanding issues were identified which need to be addressed prior to any further implementation.

Collection of weight data at the scale house worked well with only minor complications. The load operator was able to quickly learn how to enter data into the computer and all loads were successfully collected and transmitted to the home base server. For the first two days of production the haul data was stored on the server but was not accessible through the internet. This was rectified and was not a problem for the remainder of the project. A small problem was identified in instances where the truck was almost, but not fully, loaded and the load operator would enter *Yes* to capture the load. The load operator would then give a small top-up amount of mix to complete the load and enter *Yes* for the second time. In those instances the ATH road checker would observe that the same truck would have two loads marked as being loaded within minutes of each other. The ATH road checker would then mark the second load as being delivered and later bring the situation to the project manager's attention. The project manager would then delete the first load from the data base through the web-site access. System revisions to handle this situation will be looked at in future versions.

No other problems occurred with the collection of the load data. Based upon this project it does appear feasible to remove the consultant hired scale person and collect the load haul data through automated means.

Most of the glitches observed during this trial project were at the paving site involving the two PDA units. The maximum range in communication between hand held and paver mounted PDA units was originally expected to be between 50 and 90 metres. In practice the maximum operating distance was between 10 and 20 metres and at times the ATH road checker operating the hand held unit would have to physically access the unit mounted on the paver. Changes would be required to improve the range and reliability of the wireless communication prior to any further implementation. The system developer is currently looking at alternative hardwire devices for wireless communication.

The battery life of the hand held unit was shorter than expected, often less than a day's production. In an attempt to conserve power the unit was sometimes turned off resulting in a few loads being entered without the GPS coordinates. The kilometre station for these loads would have to be updated later by the project manager via the web-site access. Carrying extra batteries and reducing power consumption by not using the screen's backlight feature would help in this regard.

The main conclusion was that, with equipment modifications as previously discussed, an automated system could be used to collect the unload haul data and transmit it to a central data base. The system as used on this project would still require a road checker to perform these duties except instead of using pencil and paper the checker would use a hand held PDA unit with GPS and wireless communication capabilities.

The internet access feature allowing the viewing and downloading of updated haul data was tried by all three parties. Each organization had a different opinion on the usefulness of this feature. Alberta Transportation staff are not directly involved in the day-to-day project management activities but instead rely upon the consultant to monitor and summarize the truck haul data. Accordingly, while it was convenient to click onto the internet and access this data they did not see it as being particularly useful for their particular needs. The consultant and contractor on the other hand found this feature to be very useful and time saving. Haul data that was once entered by hand into spreadsheet programs could now be quickly downloaded off the internet. The contractor's head office staff found the instant access to the near real-time data to be useful. They could easily check on the status of the project without having to contact their field staff.

Comparisons were made between the data collected using the regular manual methods and that collected using the ATH system. For the load data there were no discrepancies other than the duplicate loads previously discussed. With the unload information two discrepancies were noted involving errant loads not delivered to the paver (one load was not delivered due to mechanical breakdown of the truck and the other was delivered at a field entrance). In each case the information entered into the ATH system was determined to be correct.

A number of other data base enhancements, not here discussed, were suggested by all three parties for incorporation into future system versions.

6.0 Benefit/Cost Considerations

Costs

The estimated capital costs for a contractor to outfit one plant and paver using the same equipment used on this project is estimated to be:

Site	Equipment	Costs
Plant	PC computer, UPS backup, monitor, printer and Truckbase license fee	$5,800
Paver	Two PDA units, one with GPS, one with satellite modem, each with wireless communication	$7,900
	Estimated Total	$13,700

These equipment costs do not account for any hardware upgrades or enhancements to address the wireless communication and battery power issues that were previously discussed, however those are not expected to be substantial.

Satellite transmission costs for this trial project were under $1.50 per load but would likely be lower with higher volume usage, i.e. full scale implementation. Assuming an average asphalt plant produces 200,000 tonnes per year, the average annual costs using satellite communications for one plant would be approximately $8,000. One remaining cost that has not yet been estimated is that associated with the data base management activities through web hosting. This cost is largely dependant on economics of scale and the actual business model used to setup and operate the ATH system. This needs to be assessed prior to full scale implementation.

Benefits

The annual cost savings associated with converting one paving operation can be summarized as follows:

- Eliminating the need for a consultant hired scale person would result in an annual savings to the department of approximately $29,000.
- The cost savings associated with automating the input of haul data into a spreadsheet or data base program and generating standard reports and invoices would be realized by the consultants and contractors. Actual costs saving would vary from company to company. Based upon discussions with the contractor and consultant that worked on this project it is estimated that a reduction in administration activities would be from 1 to 4 man-hours per day. This would roughly translate to $5,000 to $20,000 per year.

These numbers indicate that the payback period to industry (primarily Alberta Transportation but also contractors and to a lesser extent consultants) is less than one year. The savings alone by not requiring a scale person ($29,000 per year) is greater than the estimated capital costs plus one year worth of satellite transmission costs - combined total of approximately $22,000.

The ATH system also offers other intangible benefits such as:

- Consultants, contractors and the department would have the ability from their office to monitor the near real-time progress of a project located anywhere in the province.

- Increased safety as one less employer would be required at the mixing plant.

- Increased accuracy of haul data as the current system involves multiple manual entries of the same data.

- Potential for better monitoring and enforcement of overweight loads.

- Ability of the road checker to track down errant loads. Under the current system the road checker has no information on which trucks have been loaded until they show up at the paver. With the ATH system the road checker knows which trucks have been loaded and can be more proactive in tracking down loads that were not delivered to the paver, i.e. were they legitimately used elsewhere on the project or are they missing?

7.0 Future Work

Based upon the encouraging results from this trial project the department plans to further investigate this technology on a limited number of projects in 2004. The ATH system to be used on these projects will be updated to include the previously discussed equipment and data base modifications. For at least a portion of these projects it is intended to have the system fully tested without the presence of the scale person and have the consultant hired road checker operate the PDA unit at the paving site.

Other outstanding issues or items to be addressed prior to full scale implementation include:

- Testing the ability of the system to handle multiple contracts.

- Testing the ability of the system to handle multiple bid items, material types, pavers and projects within a single contract.

- Assessing the ability of the system to be integrated into other mixing plants and scale heads.

- Determine the reliability of the system. Will system breakdowns stop production or do other back up measures need to be put into place?

- What business model is to be used to purchase the equipment for other contractors and plants and how are the ongoing operation costs to be financed?

- Does the system provide the department a sufficient amount of protection against receiving fraudulent weighs?

Although the discussions in this report have focused on asphalt paving work, the department also intends to investigate the future use of this system on granular base course projects. While the process is similar – haul trucks are loaded in the pit and unloaded on the road – there are also significant differences, i.e. no asphalt plant or paver, which will likely require further system modifications.

Acknowledgements

The following individuals are acknowledged for their contribution in the development and pilot testing of the Automated Truck Haul System.

Truckbase Corporation - Mike Malychuk, Rob Farquharson and Troy Arnestad
E Construction Ltd. - Harold Orom
Al-Terra Engineering - Sean Snowden

References

1 Rastin, Sandra, "Outsourcing of the Engineering Design Process in the Alberta Transportation and Utilities Department", Canadian Policy Research Networks, December 1999, Discussion Paper No. W|09

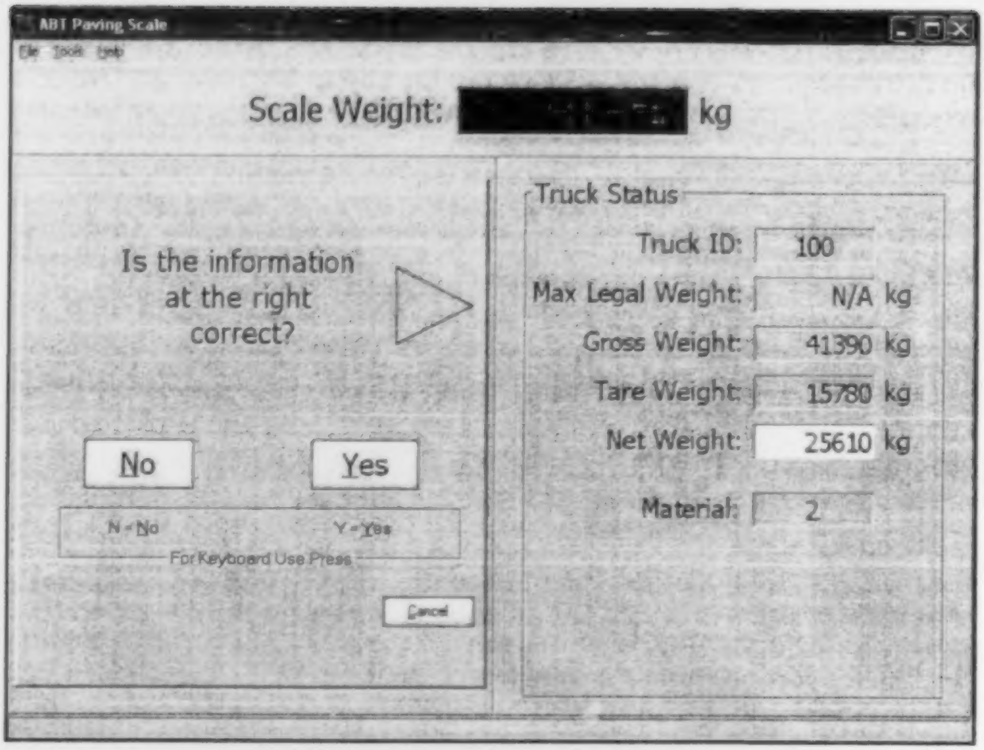
2 Lo, Allan, "Automated Electronic Data Transfer System for Truck Hauls", Alberta Transportation and Utilities, December 1993, ABTR/RD/RR-93/13

3 Stantec Consulting Ltd., "Feasibility Study for the Use of Information Technology in the Measurement of Highway Construction Materials – Final Report", Prepared for Alberta Transportation, May 2001

4 Lo, Allan "GPS Maintenance Tracking Pilot Project", Alberta Transportation and Utilities, November 1996, RR96/02

5 Truckbase Corporation, "Alberta Transportation Truck Haul Tracking System Pilot Project – Final Report", Prepared for Alberta Transportation, November 2003

Figures



ABT Paving Scale
File Tools Help

Scale Weight: kg

Is the information at the right correct?

No
Yes
N = No
Y = Yes
For Keyboard Use Press
Cancel

Truck Status

Truck ID: 100

Max Legal Weight: N/A kg

Gross Weight: 41390 kg

Tare Weight: 15780 kg

Net Weight: 25610 kg

Material: 2

Figure 1 Input Screen of Scale House Computer

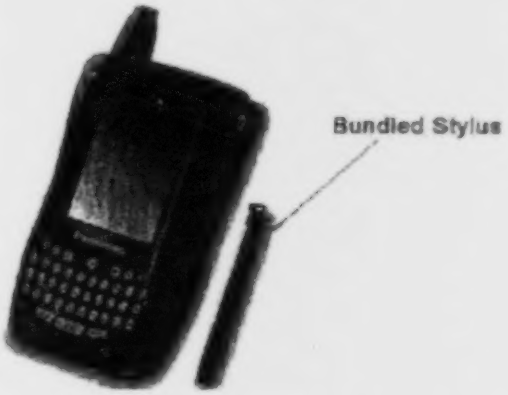
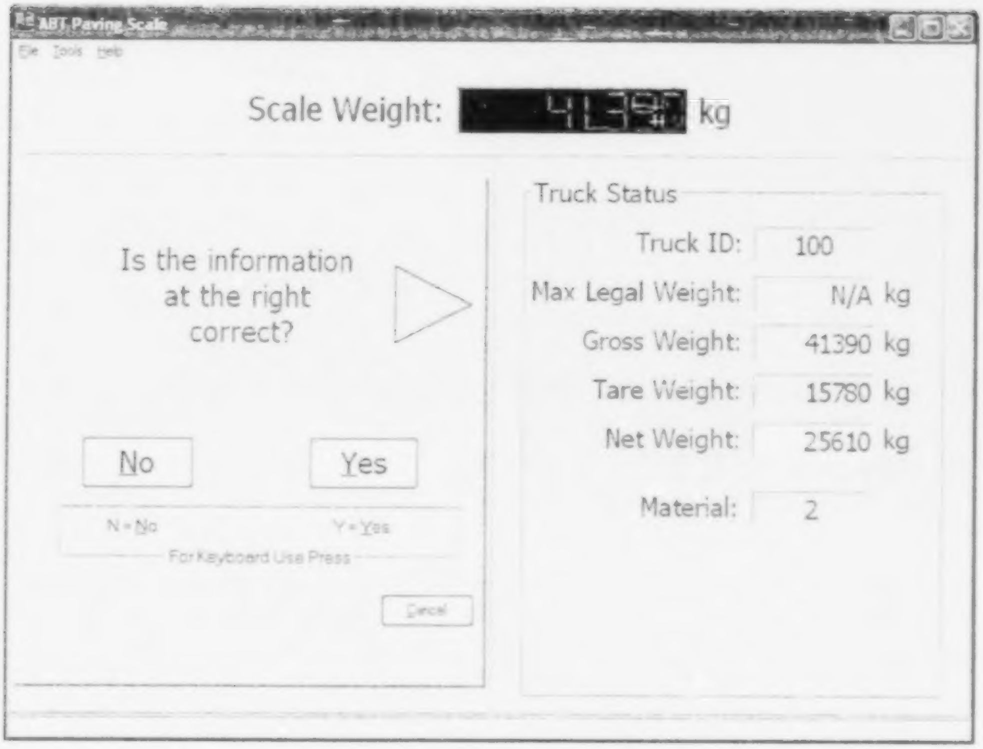

Bundled Stylus

Figure 2 Panasonic Toughbook Unit for Road Checker

Figures


ABT Paving Scale
File Tools Help
No
Yes
N = No
Y = Yes
For Keyboard Use Press
Cancel

Scale Weight: 41390 kg

Is the information at the right correct?

Truck Status

Truck ID: 100
Max Legal Weight: N/A kg
Gross Weight: 41390 kg
Tare Weight: 15780 kg
Net Weight: 25610 kg
Material: 2

Figure 1 Input Screen of Scale House Computer

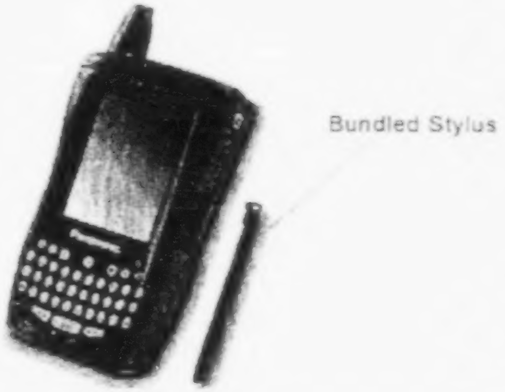
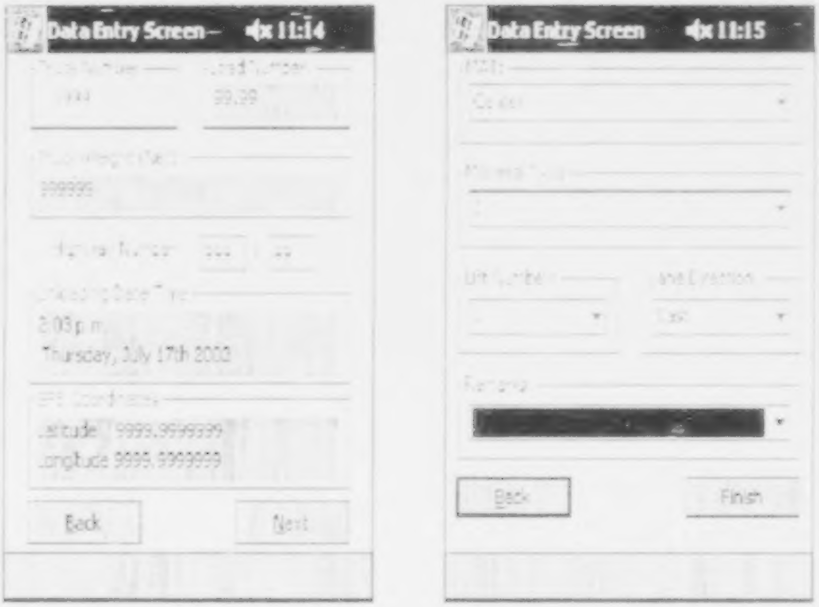

Bundled Stylus

Figure 2 Panasonic Toughbook Unit for Road Checker



Data Entry Screen
11:14
Data Entry Screen
11:15
Back
Next
Back
Finish

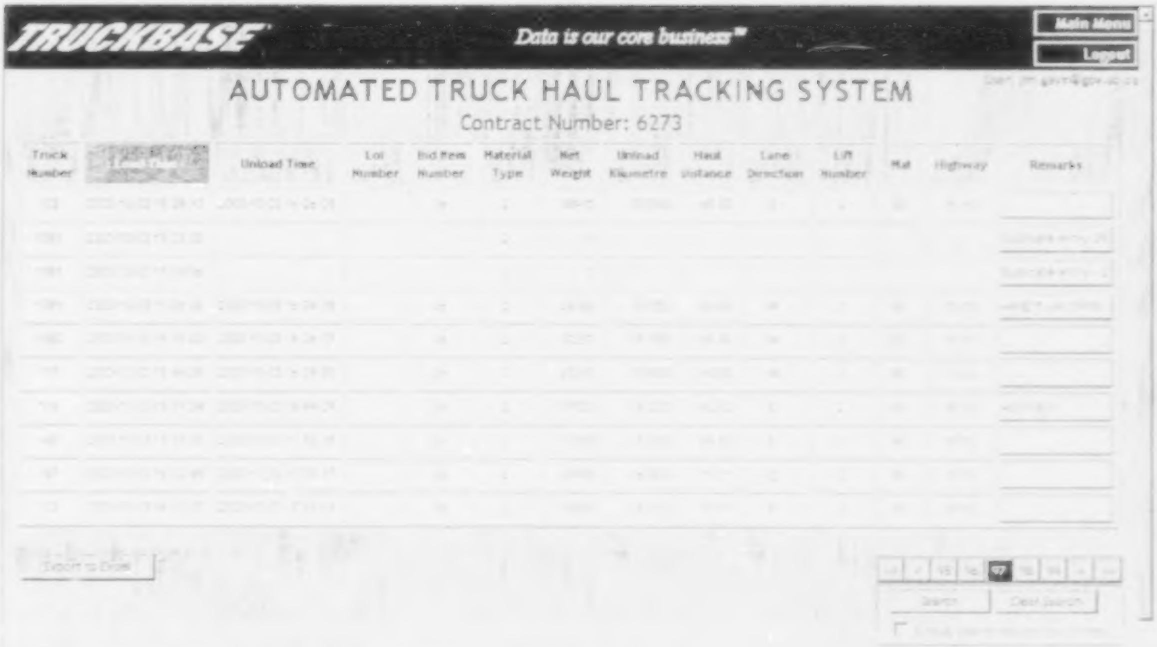
99.99

999999

2:03 p.m.
Thursday, July 17th 2003

Latitude 9999.9999999
Longitude 9999.9999999

Figure 3 Example of Data Entry Screen for Road Checker's PDA



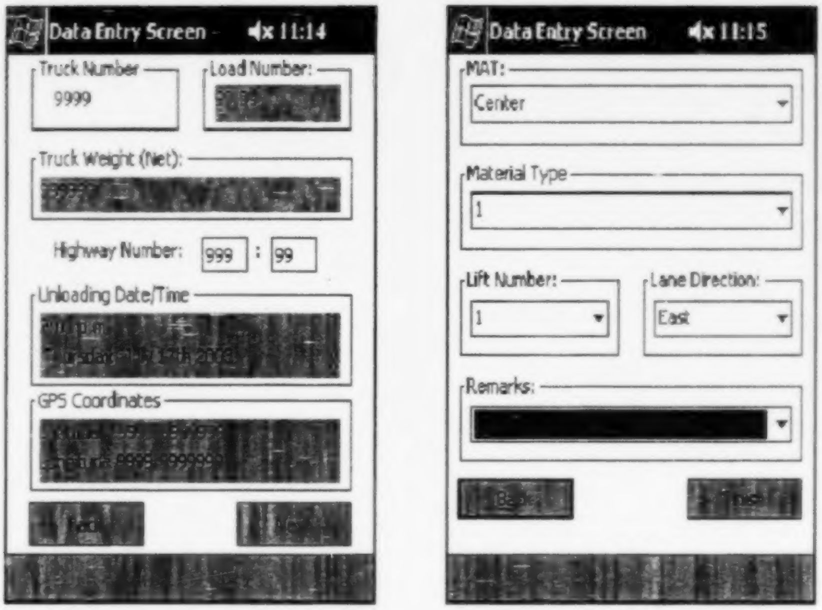
TRUCKBASE
Data is our core business™
Main Menu
Logout

AUTOMATED TRUCK HAUL TRACKING SYSTEM

Contract Number: 6273

Truck Number		Unload Time	Lot Number	Bid Item Number	Material Type	Net Weight	Unload Kilometre	Haul Distance	Lane Direction	Lift Number	Mat	Highway	Remarks

Figure 4 Online Screen View of the Automated Truck Haul System



Data Entry Screen
11:14
Data Entry Screen
11:15

Truck Number: 9999

Load Number: [illegible]

Truck Weight (Net): [illegible]

Highway Number: 999 : 99

Unloading Date/Time: [illegible]

GPS Coordinates: [illegible]

MAT: Center

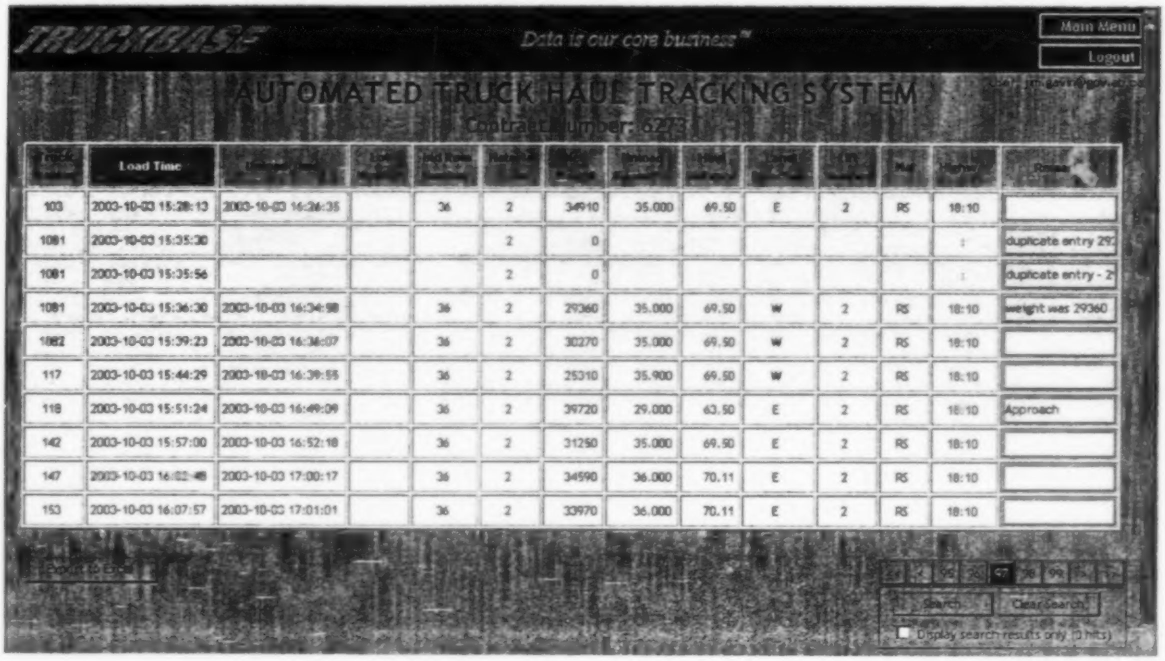
Material Type: 1

Lift Number: 1

Lane Direction: East

Remarks:

Figure 3 Example of Data Entry Screen for Road Checker's PDA



TRUCKBASE
Data is our core business™
Main Menu
Logout
Export to Excel
Search
Clear Search
☐ Display search results only

AUTOMATED TRUCK HAUL TRACKING SYSTEM

Contract Number: 6273

[illegible]	Load Time	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Mat	[illegible]	[illegible]
103	2003-10-03 15:28:13	2003-10-03 16:26:35		36	2	34910	35.000	69.50	E	2	RS	18:10	
1081	2003-10-03 15:35:30				2	0						:	duplicate entry 29
1081	2003-10-03 15:35:56				2	0						:	duplicate entry - 2
1081	2003-10-03 15:36:30	2003-10-03 16:34:58		36	2	29360	35.000	69.50	W	2	RS	18:10	weight was 29360
1082	2003-10-03 15:39:23	2003-10-03 16:36:07		36	2	30270	35.000	69.50	W	2	RS	18:10	
117	2003-10-03 15:44:29	2003-10-03 16:39:55		36	2	25310	35.900	69.50	W	2	RS	18:10	
118	2003-10-03 15:51:24	2003-10-03 16:49:09		36	2	39720	29.000	63.50	E	2	RS	18:10	Approach
142	2003-10-03 15:57:00	2003-10-03 16:52:18		36	2	31250	35.000	69.50	E	2	RS	18:10	
147	2003-10-03 16:02:48	2003-10-03 17:00:17		36	2	34590	36.000	70.11	E	2	RS	18:10	
153	2003-10-03 16:07:57	2003-10-03 17:01:01		36	2	33970	36.000	70.11	E	2	RS	18:10	

Figure 4 Online Screen View of the Automated Truck Haul System

Appendix C British Columbia Ministry of Transportation

C-1 Design Build Major Project (RFP - General Conditions)

SUMMARY OF KEY INFORMATION

RFP Title:	Project #0-6559-0001, Glenrosa Interchange Project Use the above RFP title on all correspondence.
Contact Person:	The only authorized Contact Person for this RFP is: C.R. (Robbie) Osbome, Project Director Ministry of Transportation and Highways Thompson - Okanagan Region 523 Columbia Street Kamloops, BC V2C 2T9 Fax No. (250) 828-4492 Address all correspondence to the Contact Person. **No telephone inquiries please.** Information offered from sources other than the above Contact Person is not official, may be inaccurate, and must not be relied on in any way by any party for any purpose.
Data room:	Location: 200 – 286 St. Paul Street, Kamloops, BC Commencing: Monday, September 28th, 1998 Closing: Closing Time for Proposal Submissions Times: 8:00 a.m. to 5:00 p.m. weekdays, excluding statutory holidays Contact Teresa Hilton at (250) 374-8311 to reserve access to the data room.
Pre-submission Briefing:	A Pre-submission briefing will be scheduled. The date, time and location of the Pre-submission briefing will be provided by facsimile by the Contact Person. All qualified parties are strongly encouraged to attend this meeting Private briefings will not be available.
Read all parts of this RFP carefully:	The recipient is solely responsible for ensuring that they have received and understood the complete RFP as described in the Table of Contents and for ensuring that they have received and understood all Addenda.
Closing Time for Proposal submissions:	January22, 1999 - 2:00 p.m. Local Time
Closing Location:	Proposals and Revisions to Proposals are to be delivered to: Ministry of Transportation and Highways Thompson - Okanagan Region Contract Administration Office Room 101, 523 Columbia Street Kamloops, BC V2C 2T9

Facsimile number for Revisions to Proposals is **(250) 828-4205.**

GC1.0 GENERAL CONDITIONS OF PROPOSAL

GC1.1 GENERAL

GC1.1.1 Interpretation

A capitalized term when used herein will have the meaning set out in the Glossary of Terms forming part of the Request For Proposals (RFP).

GC1.1.2 Purpose and Eligibility

The purpose of this RFP is to solicit Proposals from qualified parties to enter into an Agreement to design and construct the Project as described in the Scope of Work and to carry out all Work in accordance with the RFP.

This RFP is open only to those parties who have responded to the advertised Request for Expressions of Interest (RFEI) for this Project and who have received written notice from the Province designating them as Proponents and inviting them to respond to this RFP.

Proposals received from any other party will not be considered.

GC1.1.3 Receipt of Complete RFP

It is the Proponent's responsibility to ensure that the Proponent has received a complete RFP as listed in the "Order of Contents". Submission of a Proposal constitutes representation by a Proponent that it has verified receipt of a complete RFP including any and all Addenda. Each and every Proposal is deemed to be made on the basis of the entire RFP including any and all Addenda issued prior to the Closing Time.

GC1.1.4 Proponent's Clarification

The Proponent must review the entire RFP prior to submitting a Proposal. Any requests for clarification of issues related to the RFP must be transmitted in writing to the Contact Person. Unless otherwise expressly permitted by the Contact Person in writing, requests for clarification of information with respect to the subject matter of the RFP must be transmitted in writing to the Contact Person no later than ten (10) days before the Closing Time.

The Contact Person will distribute to all Proponents copies of a summary of all requests for clarification of issues related to the RFP and the corresponding responses with respect to clarification of the RFP.

By submitting a Proposal, the Proponent indicates acceptance of the entire RFP and waives any further right to rectification or clarification of any aspect of the RFP.

GC1.1.5 Addenda

Written Addenda are the only means of varyingor otherwise changing any of the information contained in this RFP. The Contact Person may amend or vary the RFP by issuing an Addendum to each Proponent. No employee or agent of the Province, other than the Contact Person, is authorized to change the content of the RFP or issue any Addenda.

Information pertaining to this RFP that is offered or obtained from sources other than the Contact Person is not official, may be inaccurate, and must not be relied on in any way by any party for any purpose associated with this RFP.

GC1.1.6 Additional Information Supplied by the Province

In addition to the RFP, the Province has arranged to make the following sources of information available to Proponents.

Without derogating from the obligations of the Proponent to investigate and satisfy itself of every condition affecting the Work, unless otherwise expressly indicated in writing in the RFP, the Province assumes responsibility for the accuracy of data supplied in the RFP and in Supporting Documents, Part A, but does not assume responsibility for the sufficiency or interpretation of that data or that the data provided is necessarily representative of anticipated or actual conditions.

No warranty or guarantee as to the accuracy, sufficiency, or relevance is made by any party for any other information, unless otherwise explicitly stated in these General Conditions.

GC1.1.6.1 Pre-submission Briefing

A Pre-submission briefing will be scheduled. The date, time and location of the Pre-submission briefing will be provided by facsimile to all the Proponents by the Contact Person. All Proponents are strongly encouraged to attend this meeting. Written questions should be submitted to the Contact Person, in advance of the briefing. Additional briefings may be scheduled at the discretion of the Contact Person. Private briefings will not be available. Information disclosed at the briefing(s) does not form a part of this RFP, unless verified by Addendum.

GC1.1.6.2 Supporting Documents

Supporting Documents, contained in Binder #3 are divided into two categories:

Part A: factual data, the accuracy of which may be relied upon by Proponents and which forms part of the RFP; and

Part B: other information which does not form a part of this RFP.

Part A may include, but is not limited to, factual geotechnical information, traffic data, mapping, legal and other survey information. The Province accepts no responsibility for any interpretation contained in any report.

The Province, at its sole discretion, may arrange for additional investigations to be conducted prior to the Closing Time. Any additional information obtained after this RFP is issued will be made available to all Proponents by way of supplementary Supporting Documents.

GC1.1.6.3 Data Room

Data room material does not form a part of this RFP and is provided solely for the convenience of the Proponents. The data room location is shown in the Summary of Key Information. The Province will provide available background materials in the data room. These materials will be considered as relevant to the Site, the background of the Project, or the standards associated with the Project. Data room materials may include Ministry manuals, historical Project related Work at various stages of completion, existing utility drawings, and record drawings.

The following conditions apply to the use of the data room and the materials available in it:

- access to the data room is by reservation only;
- reservations for access to the data room will be made on a first come, first served basis;
- each reservation will be for a four (4) hour period; reservations for consecutive periods will not be accepted where they may conflict with access requests made by other Proponents;
- materials are for on-site viewing only, no reproduction services will be provided. Proponents may make reproductions, using their own equipment, provided that the integrity of the materials is not compromised (e.g. bound or stapled materials are not to be disassembled);
- the accuracy, completeness, relevance, or appropriateness of any data room material is not guaranteed nor warranted by any party; and
- additional materials may be added from time to time as deemed appropriate buy the Province.

A list of material in the data room is attached to this RFP. Proponents will be notified by fax or mail of any additions to the data room material.

Project specific information in the data room will be made available to the Contractor after Award.

GC1.1.7 Proponent's Investigation

Submission of a Proposal is deemed to be conclusive evidence that the Proponent:

- has not relied on any information provided by, through, or on behalf of the Province during the Request for Expressions of Interest phase of this procurement;
- has investigated and satisfied itself of every condition affecting the Work, including but not limited to the site conditions, labour supply conditions, and resources to be provided;
- has based its investigation on its own examination, knowledge, information, and judgement, and not upon any statement, representation, or information made or given by or on behalf of the Province other than information contained in the RFP; and
- is willing to assume and does assume all risks regarding conditions affecting the Work, including but not limited to all risks associated with subsurface geotechnical conditions, whether or not those conditions are revealed by any information available to, or investigations undertaken by, the Proponent.

GC1.1.7.1 Access to the Site

For purposes of inspection, testing, or investigations prior to the Closing Time, the Province will, to the best of its ability, allow Proponents to have access to those portions of the Site owned by either the Province or other governments and public agencies, subject to environmental and time constraints.

Written requests for Site access must be received by the Contact Person a minimum of seven (7) days prior to the requested site visit date stating the purpose of the requested access.

Proponents must not enter the Site without the prior written approval of the Contact Person.

As a condition of entering the Site, Proponents irrevocably accept full liability for any and all events arising from any Site access.

GC1.1.7.2 Licences and Permits

The Proponent assumes full responsibility for obtaining and holding any and all rights, permits, licences, consents, approvals, and authorities issued by any level or agency of government or private party that are required to conduct any Site investigation or to carry out the Work.

GC1.1.8 Compliance with Agreement

The Proponent acknowledges by submission of a Proposal that the Work will be performed in strict accordance with the Agreement to the satisfaction of the Ministry Representative.

The Agreement will include this RFP and those portions of the Proposal, including any changes negotiated prior to Award, that are accepted by the Owner.

GC1.2 SUBMISSION REQUIREMENTS

Any Proposal that is not complete in any way or that does not comply with any of the requirements of these General Conditions will be subject to Disqualification at the sole discretion of the Province.

Information provided by the Province on any form must not be altered or contradicted in any way.

GC1.2.1 Qualified Proponents

Proposals must be submitted by qualified Proponents to be considered. The Province reserves the right to disqualify any Proponent at any time, if, in the sole opinion of the Province, there has been a material change in any of the information in the Proponent's Expressions of Interest, leading to its selection as a Proponent.

GC1.2.2 Delivery

The Closing Location and the Closing Time are shown on the Summary of Key Information. The Proponent must ensure that a complete, clearly labelled, and securely sealed Proposal consisting of:

- Proposal Form; [see GC1.2.3];
- Proposal Security [see GC1.2.4];
- Technical Proposal [see GC1.2.5]; and
- Price Envelope containing the Schedule of Prices [see GC1.2.6]

is received at the Closing Location before the Closing Time. Neither the Province, nor its employees and agents will assume any responsibility for timely receipt of any Proposal.

The Proponent should ensure that its name is legibly printed on the outside of the sealed Proposal package and that all packages forming its Proposal are clearly labelled.

GC1.2.3 Proposal Form

The Proposal Form must be a properly executed, original or unaltered copy of the form indicated in Appendix 1, Part A. The full legal name of the Proponent, signature of an Authorized Signatory, and date of execution must be on the Proposal Form. The name of the Authorized Signatory, a complete address, a phone number and fax number should be shown.

The Proposal Form must be conspicuously enclosed within the Proposal package.

GC1.2.4 Proposal Security

The Proposal Security must be:

an Irrevocable Letter of Credit properly executed and consistent with the form and value indicated in Appendix 1, Part A; or

a bank draft or certified cheque in the value indicated in the specimen Irrevocable Letter of Credit.

The Proposal Security must be conspicuously enclosed within the Proposal package.

GC1.2.5 Technical Proposal

The Technical Proposal must address all of the technical criteria identified in this RFP. The Technical Proposal must demonstrate to the satisfaction of the Province that the Work anticipated by the Proposal will result in a finished product that will be suitable for the intended purpose of the Project as described in the Scope of Work when carried out in accordance with the Standards.

One (1) original and five (5) identical and complete copies of the Technical Proposal must be provided. The original must be submitted bound. One copy of the Technical Proposal must be submitted unbound and unperforated. The other four copies of the Technical Proposal should be submitted bound or in a 3-ring binder(s) on single sided 8.5"x 11" or 11" x 17" paper. Where practical, text should be 1.5 x spaced and not smaller than 11-point typeface. Copies of all documents and drawings will be submitted in both hard copy and electronic format. The electronic formats will be compatible with MS-Office 97 and AutoCAD 12.

GC1.2.6 Price Envelope

The Price Envelope containing the Schedule of Prices must be securely sealed and conspicuously enclosed within the Proposal package.

GC1.2.6.1 Schedule of Prices

The Schedule of Prices must be a properly executed, original or unaltered copy of the form of the same name provided in the RFP by the Province.

All blank spaces under the heading "Item Price" must be completed for each Proposal Item. The Item Price for Provisional Sum Items is provided by the Province, no entry is to be made by the Proponent.

The Proponent represents and warrants by the submission of the Proposal that each Item Price will be irrevocably deemed to be the full and final compensation to the Contractor for any and all costs associated with completing the Proposal Item, including, but not limited to; all applicable cash allowances, contingencies, license costs, fees, taxes or duties in effect at the Closing Time.

GC1.2.7 Execution

The Proponent is deemed to represent and warrant, by the submission of the Proposal, that the Proposal has been duly authorized and validly executed and is intended to create a binding obligation of the Proponent.

GC1.3 REVISIONS TO THE SCHEDULE OF PRICES

Any Revision must be in writing, properly executed, and received at the Closing Location before the Closing Time. The Proponent assumes all responsibility for the timely and effective delivery of any Revision. Neither the Province nor its employees and agents will assume any responsibility for timely receipt of any Revisions, nor for ensuring that the fax receiving equipment is able to receive transmissions in an accurate or timely manner. Revisions must be signed by an Authorized Signatory. The position or title of the Authorized Signatory should be indicated below the signature.

Each Revision must substantially comply with the following requirements:

- clearly identify the Proponent and the Project;
- state the Closing Time and Closing Location; and
- clearly identify the Proposal Item(s) being Revised and state the amount by which each Proposal Item Price is to be increased or decreased.

The fax number and address for delivery of Revisions is shown on the Summary of Key Information. No other fax number or address is valid.

GC1.3.1 Evaluation of Revisions

Each Revision should be numbered sequentially by the Proponent. Unless the Proponent clearly stipulates to the contrary on the face of the Revision[s]; each Revision will be deemed to have been transmitted by the Proponent in the sequence received by the Province, and each successive Revision will nullify and replace any and all previous Revision[s] to the identified Proposal Item[s].

If, in the sole opinion of the Province, any Revision or any part of a Revision is unclear or ambiguous as to meaning or intent, or does not substantially comply with the requirements of GC1.3, that Revision or that part of the Revision will, in the sole discretion of the Province, either be deemed to be valid and the meaning given to it by the Province will be binding on the Proponent; or deemed to be invalid and be disregarded by the Province.

If any Revision or any part of a Revision is deemed invalid, the Proposal and any valid Revision[s] or parts of the Revision will continue to be binding on the Proponent.

GC1.4 EVALUATION OF PROPOSALS

GC1.4.1 Process

Evaluation of Proposals will be conducted in the manner and sequence described below. The criteria described below and shown on the Evaluation Matrix are the only factors which will be used to evaluate Proposals.

GC1.4.2 Clarification and Rectification

During evaluation of the Proposals and prior to opening the Price Envelopes, the Contact Person may request that any Proponent provide clarification or rectification of any aspect of a Proposal.

Failure to provide an adequate written response within two (2) days, or any longer period specified in writing by the Contact Person, of receiving a request for clarification from the Contact Person, may, at the sole discretion of the Province, result in Disqualification of the Proposal.

GC1.4.3 Disqualification

If any Proposal contains a defect or fails in some way to comply with any requirement of these General Conditions which, in the opinion of the Province, is not material, the Province may waive the defect and accept the Proposal. The determination of whether or not to disqualify or otherwise remove any Proposal from the evaluation process will be made in the sole discretion of the Province.

GC1.4.4 Mandatory Requirements (Step 1)

Proposals must comply with GC1.2 Submission Requirements. Proposals which do not comply with these mandatory requirements will be subject to Disqualification.

GC1.4.5 Pass / Fail Evaluation (Step 2)

Technical Proposals will be subject to an initial pass / fail evaluation to determine whether each Proponent has, in the opinion of the Province, consistently demonstrated an overall approach which is considered by the Province to meet the purpose, intent, and the requirements of this RFP.

Proposals which fail this evaluation will be subject to Disqualification.

GC1.4.6 Rated Criteria Evaluation (Step 3)

Proposals will be evaluated in accordance with the Evaluation Matrix. The Province will only award points where the Proposal exceeds the basic objectives of the RFP. Points will only be allocated in accordance with the Evaluation Matrix.

Both quantitative and qualitative indicators and measures may be used to evaluate each Proposal.

The following will be considered in applying the evaluation criteria and allocating available points:

- thoroughness and clarity in demonstrating an understanding of each individual issue and objective;
- integration and compatibility of the various elements of the Proposal;
- adaptability and flexibility;
- degree of innovation; and
- apparent or potential value to the Province of the anticipated Work to be undertaken.

GC1.4.7 Price Envelope Evaluation (Step 4)

All Price Envelopes will remain sealed until all Rated Criteria Evaluations referred to in GC1.4.6 have been finalized and documented by the Province.

The Item Prices and Guaranteed Maximum Price calculated by the Province in accordance with this RFP will be deemed to be the basis of the Proponent's offer and will be binding on the Proponent.

Points for Guaranteed Maximum Price will be allocated in accordance with the Evaluation Matrix.

GC1.4.8 Final Evaluation (Step 5)

The final scoring of each Proposal will be determined in accordance with the Evaluation Matrix.

The Proposal with the highest total score will be deemed to be the Preferred Proposal, unless there are two or more Proposals within two (2) points of the highest score. In that case, the Proposal with the lowest Guaranteed Maximum Price will be deemed to be the Preferred Proposal.

Once the Preferred Proposal has been identified, the Province may enter into discussions with that Proponent to clarify any outstanding issues and to identify and finalize those portions of the Proposal, including negotiation of any changes, that will form part the Agreement.

If discussions are unsuccessful, the Province reserves the right to enter contract discussions with the next highest rated Proponent or to decide not to award a contract.

GC1.5 WITHDRAWAL OF PROPOSALS

All Proposals are irrevocable at the Closing Time, remain irrevocable for a period of ninety (90) days following the Closing Time, and may not be altered or withdrawn during that period for any cause without the written permission of the Province.

If the Proponent does not execute the Agreement within fourteen (14) days of the date on which the Province requests it to do so in writing, the Province will retain from the Proposal Security the lesser of the difference between the Guaranteed Maximum Price of the said Proponent and the amount for which the Province legally contracts with another party to perform the Work and the full value of the Proposal Security.

GC1.6 RIGHT NOT TO AWARD

The highest scored or any Proposal will not necessarily be accepted. The Province reserves the right to reject any or all Proposals. Where the Province determines that all Guaranteed Maximum Prices are too high, or that all Technical Proposals are unacceptable, or the Province does not for any reason wish to continue with this process, all Proposals may be rejected. In the event that all Proposals are rejected, the Province reserves the right to call for tenders or call for proposals for the same or similar Work in the future.

GC1.7 ACCEPTANCE

GC1.7.1 Form of Acceptance

A written notice in the form of an Award is the only valid form of acceptance of any Proposal.

GC1.7.2 Signing of the Agreement

By submitting a Proposal, the Proponent agrees that, upon Award, the Proponent will execute the Agreement substantially in the form included in the RFP, within fourteen (14) days of the date on which the Province requests it to do so in writing. The Proponent's Proposal, or any portion thereof, if accepted by the Province, may form a part of the Agreement.

GC1.7.3 Prior to Commencement of Work

The Proponent must, within fourteen (14) days of the date of the Award letter and prior to commencement of Work on the Site, obtain and deliver to the Province:

- the Bonds;
- a valid Workers' Compensation Board registration number; and
- evidence of compliance with the Insurance Specifications in this RFP.
- Contract Security

GC1.8 DISPUTE RESOLUTION AND LIMITATION OF DAMAGES

Each Proponent, by submitting a Proposal, irrevocably agrees that:

- the Proponent will, within fourteen (14) days of any issue[s] in dispute first coming to the attention of the Proponent, submit written notice to the Contact Person of any disputes arising out of this Proposal call or any action or decision of the Province;
- all disputes not resolved through negotiation between the parties within sixty (60) days of the dispute being presented in writing to the Contact Person will be referred to and finally resolved by binding arbitration in accordance with the *Commercial Arbitration Act*, unless the parties agree otherwise;
- the Proponent will not claim or be entitled to damages in excess of the reasonable costs directly incurred by the Proponent in preparing its Proposal for matters relating to the Award of the contract or in respect of this Request for Proposals process, nor will the Proponent claim or be entitled to any loss of revenue or loss of profits; and
- if the Province elects to reject all Proposals, the Province will not be liable to any Proponent for any claims, whether for costs, damages, loss of anticipated profit, or any other matter whatsoever.

GC1.9 *SKILLS DEVELOPMENT AND FAIR WAGE ACT*

The Proponent represents and warrants by submission of a Proposal that the Proponent is aware that the Work is subject to the *Skills Development and Fair Wage Act* and *Regulation* and that the Proponent has read, understands, and agrees to comply with Act and Regulation.

GC1.10 *FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY ACT*

All documents and other records in the custody of or under the control of the Province are subject to the *Freedom of Information and Protection of Privacy Act*. Subject to the limitations of the *Freedom of Information and Protection of Privacy Act*, all documents and other records submitted in response to this solicitation will be considered confidential.

GC1.11 NON-COLLUSION

A Proponent will not discuss or communicate with any other Proponent about the preparation of its Proposal. Each Proponent will ensure that its participation, and that of its Team members', in the RFP process is conducted without collusion or fraud.

EVALUATION MATRIX

STEP 1 MANDATORY REQUIREMENTS	GC 1.4.4	YES	NO
Proposal received from Qualified Proponent	GC1.2.1		
Proposal received at Closing Location prior to Closing Time	GC1.2.2		
Proposal Form included	GC1.2.3		
Proposal Security included	GC1.2.4		
One (1) original and five (5) copies of Technical Proposal included	GC1.2.5		
Sealed Price Envelope included	GC1.2.6		

A "NO" on any Mandatory Requirement will result in a Proposal being subject to Disqualification.

STEP 2 PASS / FAIL EVALUATION	GC1.4.5	PASS	FAIL

A "FAIL" will result in a Proposal being subject to Disqualification.

STEP 3 RATED CRITERIA EVALUATION	GC1.4.6	Maximum Available Points
Jobs for BC Strategy		5
Community Impact		5
Traffic Management		5
Maximum Available Earned Points		**15**

Price Envelopes will remain sealed until Step 3 has been completed.

STEP 4 PRICE EVALUATION	GC1.4.7	Guaranteed Maximum Price

STEP 5 FINAL EVALUATION	GC1.4.8	Maximum Available Points
Earned Rated Criteria Points		15
$85 - 85 \times \left(\frac{\text{This Proposal's Guaranteed Maximum Price} - \text{Lowest Guaranteed Maximum Price}}{\text{Lowest Guaranteed Maximum Price}} \right)$		85
Maximum Available Total Proposal Score		**100**

For details, refer to the RFP General Conditions Item # or Submission Requirements Item # shown.

THESE ARE THE ONLY FACTORS WHICH WILL BE USED TO EVALUATE PROPOSALS.

C-2 Minor Works (General Conditions)

MINOR WORKS - GENERAL CONDITIONS

Table of Contents

GC 1.00 CONTRACTOR REPRESENTATIONS AND WARRANTIES 3
GC 2.00 CONTRACT SECURITY 4
GC 3.00 TERM 4
GC 4.00 COMMENCEMENT OF THE WORK 4
GC 5.00 INDEPENDENT CONTRACTOR 4
GC 6.00 COMPLIANCE WITH LAWS 5
GC 7.00 RISKS AND INDEMNITY 5
GC 8.00 INSURANCE 5
GC 9.00 CLAIMS REPORTING 5
GC 10.00 SPECIFICATIONS AND MATERIALS 6
GC 11.00 CONDITION OF SITE 6
GC 12.00 QUALITY OF WORK 6
GC 13.00 INSPECTIONS AND WARRANTY 6
GC 14.00 WORK ORDERS 7
GC 15.00 CONTRACT AND ASSIGNMENT 7
GC 16.00 MINOR WORKS - RESOLVING DISPUTES 7
GC 17.00 BINDING ARBITRATION 8
GC 18.00 MINISTRY'S COVENANTS 8
GC 19.00 CONTRACT PRICE 8
GC 20.00 PAYMENT TERMS 9
GC 21.00 TERMINATION 10
GC 22.00 COMPLETION OF THE WORK 10
GC 23.00 EXTENSION OF THE COMPLETION DATE 10
GC 24.00 GENERAL 11

BRITISH
COLUMBIA
PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION

This Contract

BETWEEN:

HER MAJESTY THE QUEEN IN RIGHT OF
THE PROVINCE OF BRITISH COLUMBIA,
as represented by the Minister of Transportation (the "Ministry")

OF THE FIRST PART

AND:

THE CONTRACTOR as identified on the execution page of this Contract

OF THE SECOND PART

WITNESSES THAT WHEREAS:

A. The Contractor has offered to perform the Work herein described at the price and on the terms herein set out; and

B. The Province has accepted the offer by Contractor to perform the Work at the price and on the terms herein set out;

Now therefore the Ministry and the Contractor agree as follows:

GC 1.00 CONTRACTOR REPRESENTATIONS AND WARRANTIES

GC 1.01 This Contract is made and entered into by the Contractor and the Ministry on the Contractor's representation and warranty that before execution the Contractor has:

(a) investigated and is satisfied of everything and of every condition affecting the Work to be executed and the labour and material to be provided;

(b) founded and based its offer to perform the Work on the Contractor's own knowledge, information, interpretation, examination and judgement;

(c) not based its offer to perform the Work on any statement, representation, clarification or information made, given, or furnished by the Ministry other than that contained in this Contract; and

(d) reviewed and understands the occupational health and safety requirements as defined under the *Workers Compensation Act* and an obligation to comply with the British Columbia Regulation 296/97 *Occupational Health and Safety Regulation*.

GC 1.02 The Contractor represents and warrants to the Ministry that:

(a) in the case of a limited company, it is a corporation within the meaning of the *British Columbia Company Act*, duly organized and validly existing and legally entitled to carry on business in British Columbia and fully legally authorized, licensed and permitted to perform the Work;

(b) where the Contractor is a corporation, and where applicable, the Contractor does hereby represent and warrant to the Ministry that the signatory has been duly authorized by the Contractor to enter into and execute this Contract, with or without corporate seal, as the case may be;

(c) it has the power and capacity to enter into this Contract and to comply with each and every term in this Contract;

(d) all necessary proceedings have been taken to authorize the execution and delivery of this Contract by the Contractor;

(e) this Contract has been properly executed by the Contractor and is enforceable against the Contractor in accordance with the terms set out in this Contract;

(f) the Contractor is not in breach of any law, and shall pay all accounts, expenses, wages, taxes, rates, fees and assessments when due and required by it on any of its undertakings; and

(g) the Contractor has the financial ability to fulfill its obligations under this Contract and is neither a party to nor threatened with litigation that would adversely affect its ability to fulfill its obligations under this Contract.

GC 1.03 This Contract constitutes the entire agreement between the parties. No understandings, representations, contracts or agreements, oral or otherwise, exist between the parties with respect to the subject matter of this Contract except as expressly set out in this Contract. The Contractor agrees that in entering into this Contract it has not and does not rely upon any previous representation of the Ministry, or of servants, employees, agents, or representatives of the Ministry, whether expressed or implied, or upon any inducement or agreement of any kind or nature. All prior understandings, negotiations, representations, contracts or agreements are cancelled.

GC 2.00 CONTRACT SECURITY

GC 2.01 The Contractor shall comply with the Contract security requirements as specified in Schedule 2 -Contract Securities.

GC 3.00 TERM

GC 3.01 The Term of this Contract shall be the period of time from the date of Award to the date upon which all the following conditions are fulfilled:

(a) the Contractor and the Ministry have performed all obligations required under this Contract;

(b) the Completion Certificate has been issued and accepted; and

(c) the warranty period as described herein has expired.

GC 3.02 Time is material and of the essence of this Contract.

GC 4.00 COMMENCEMENT OF THE WORK

GC 4.01 The Contractor shall begin the Work immediately upon the later of either:

(a) the execution of the Contract by the Ministry; or

(b) on the Commencement Date as specified in this Contract.

GC 4.02 Before beginning any Work, the Contractor shall deliver to the Ministry:

(a) the required Contract securities as set out in Schedule 2 - Contract Securities;

(b) the original or certified copies of all insurance policies and necessary endorsements necessary to meet the requirements in Schedule 6 - Insurance Specifications; and

(c) the Construction Schedule for the Work.

GC 4.03 The Contractor shall ensure the Ministry Representative is on the Site at the time the Work begins unless other arrangements have been previously approved by the Ministry Representative.

GC 4.04 The Contractor shall perform the Work in accordance with this Contract.

GC 5.00 INDEPENDENT CONTRACTOR

GC 5.01 The Contractor shall be an independent Contractor and not the servant, employee, partner, or agent of the Ministry, and shall ensure that personnel hired by the Contractor are employees of the Contractor and not of the Ministry.

GC 5.02 The Contractor shall not be subject to the control of the Ministry in respect of the manner in which any instructions are carried out except as specified in this Contract.

GC 5.03 The Contractor shall not provide any service or perform any work for any other person or corporation, which, in the reasonable opinion of the Ministry Representative, may give rise to a conflict of interest.

GC 5.04 The Contractor shall not commit or purport to commit the Ministry to the payment of any money or the performance of any duty.

GC 5.05 The Contractor is solely responsible for all matters arising out of the relationship of employer and employee.

GC 5.06 At the Contractor's own expense, the Contractor shall provide all tools, equipment, labour, materials other than materials supplied by the Ministry and services incidental to and necessary for the performance and execution of the Work.

GC 6.00 COMPLIANCE WITH LAWS

GC 6.01 The Contractor shall keep fully informed of and comply with all applicable Federal, Provincial, and Municipal legislation, regulations and bylaws in effect during the Term of this Contract.

GC 6.02 At the Contractor's own expense, the Contractor shall obtain all permits and licenses, including building permits, necessary for the provision of the Work.

GC 6.03 The Contractor shall pay all Provincial, Municipal, or Federal taxes or excises in force during the Term.

GC 6.04 The Contractor shall apply for, obtain and remit to the Ministry any applicable refund or remission of Federal and Provincial taxes, duties or impost available with respect to any articles, materials or equipment used in connection with this Contract.

GC 6.05 The Contractor shall comply with the British Columbia Regulation 296/97 *Occupational Health and Safety Regulation* and shall:

(a) have an occupational health and safety program in place during the Term of this Contract;

(b) provide adequate training, instruction, and direction to all workers on Site; and

(c) pay all required assessments pursuant to the *Workers Compensation Act* and the *Occupational Health and Safety Regulation*.

GC 7.00 RISKS AND INDEMNITY

GC 7.01 The Contractor shall bear all risk of loss or damage from any cause which may occur to any part or portion of the Work, until the Work has been finally accepted by the Ministry Representative.

GC 7.02 If any loss or damage occurs to the Work before the Ministry Representative issues final acceptance, the Contractor shall immediately repair or re-execute any damaged Work at the Contractor's expense.

GC 7.03 The Contractor shall indemnify and save harmless the Ministry from and against all claims, liabilities, demands, losses, damages, costs and expenses, fines, penalties, assessments and levies made against or incurred, suffered or sustained by the Ministry at any time or times (whether before or after the expiration or sooner termination of this Contract) where the same or any of them are based upon or arise out of or from anything done or omitted to be done by the Contractor or any servant, agent, employee, officer, director, shareholder or Subcontractor of the Contractor.

GC 8.00 INSURANCE

GC 8.01 The Contractor shall provide and maintain the insurance coverage as specified in Schedule 6 - Insurance Specifications of this Contract.

GC 9.00 CLAIMS REPORTING

GC 9.01 Within seven (7) days from the date which any accident or occurrence arose, the Contractor shall give written pertinent details to: The Manager, Claims , Ministry of

Transportation, 4C - 940 Blanshard Street, PO Box 9850 Stn Prov Govt, Victoria, British Columbia, V8W 9T5.

GC 10.00 SPECIFICATIONS AND MATERIALS

GC 10.01 The Contractor shall carefully study and compare all specifications, Drawings and other instructions.

GC 10.02 The Contractor shall treat at all times as confidential all information or material supplied to or obtained by the Contractor or Subcontractors as a result of this Contract; and not permit the publication, release or disclosure of the same without the prior written consent of the Ministry except insofar as the disclosure is necessary to enable the Contractor to fulfill its obligations under this Contract.

GC 10.03 The Contractor shall comply with the requirements of the Standard Specifications and all Schedules to this Contract.

GC 10.04 The Contractor shall not substitute any supplies or materials where a "brand name" or model has been specified in this Contract and/or any Supplemental Agreements without first obtaining written approval from the Ministry Representative.

GC 11.00 CONDITION OF SITE

GC 11.01 The Contractor shall confine all Work to the Site.

GC 11.02 The Contractor shall keep the Site free from accumulations of waste material or rubbish caused by the Contractor's activities during the progress of the Work and shall remove all rubbish from the Site and the vicinity by the completion of the Work.

GC 11.03 The Contractor shall maintain, at its own cost, all Disturbed Features in accordance with the Maintenance Specifications and to the satisfaction of the Ministry Representative.

GC 12.00 QUALITY OF WORK

GC 12.01 The Contractor shall supervise the Work using the Contractor's best skill and attention.

GC 12.02 The Contractor shall perform all Work in a manner that at all times maintains a standard of care, skill and diligence in performing the Work in accordance with good construction practices.

GC 12.03 The Contractor shall ensure that all persons employed in connection with the timely completion of the Work are competent to perform the Work, adequately trained, fully instructed and supervised.

GC 12.04 The Contractor shall ensure all Work performed and materials supplied meet or exceed the requirements specified in this Contract.

GC 13.00 INSPECTIONS AND WARRANTY

GC 13.01 The Contractor shall complete all of the Work to the satisfaction of the Ministry Representative in accordance with Schedule 5 - Time Schedule.

GC 13.02 The Contractor shall permit the Ministry Representative at all times to have access to the Work for the purposes of inspecting the Work.

GC 13.03 The Contractor shall uncover any Work for examination as required by the Ministry Representative at the Contractor's expense when the Work has been previously covered up without prior approval or consent from the Ministry Representative.

GC 13.04 The Contractor shall rectify any defective or deficient Work at the Contractor's own expense to the satisfaction of the Ministry Representative from the Commencement Date to the Completion Date and for a warranty period of 365 calendar days after the Completion Date.

GC 13.05 On written request of the Ministry Representative, the Contractor shall provide samples of supplies or materials to the Ministry Representative prior to delivery to the Site.

GC 13.06 An inspection by the Ministry Representative does not relieve the Contractor of responsibility for the quality of the Work, or from any obligation to perform the Work in accordance with the requirements of this Contract.

GC 14.00 WORK ORDERS

GC 14.01 The Contractor shall comply with every Work Order.

GC 14.02 The Contractor shall not base a claim or dispute upon verbal orders for any reduction, change or Extra Work performed under this Contract unless the Contractor has first received an authorized written Work Order from the Ministry Representative.

GC 15.00 CONTRACT AND ASSIGNMENT

GC 15.01 This Contract shall be binding upon:

(a) the Ministry and its assigns; and

(b) the Contractor and its successors and permitted assigns.

GC 15.02 A waiver of any provision or breach of this Contract shall be effective only if it is in writing and signed by the Ministry and shall not be deemed to be a waiver of any subsequent breach of the same or any other provision of this Contract.

GC 15.03 The Contractor shall not assign this Contract, nor Subcontract any of the Contractor's obligations under this Contract to any person, firm or corporation without first obtaining the written consent of the Ministry Representative, which consent shall be in the absolute discretion of the Ministry Representative.

GC 16.00 MINOR WORKS - RESOLVING DISPUTES

GC 16.01 A dispute is a difference between the Ministry and the Contractor as to the interpretation, application, and administration of the Contract or any failure to agree wherever agreement between the parties is required.

GC 16.02 The Contractor may be in dispute with the Ministry's final decision on questions with regard to the quality or quantity of the Work, or of the material, as to the meaning or interpretation of the, Drawings and specifications.

GC 16.03 The Ministry and the Contractor shall use all reasonable efforts to resolve a dispute by amicable negotiations and agree to provide without prejudice frank, candid, and timely disclosures of relevant information and documents to facilitate these negotiations.

GC 16.04 If a dispute is not resolved promptly, the Contractor shall give the Ministry a written protest within fourteen (14) working days about the particulars of the matter in dispute to the Ministry Representative.

GC 16.05 The Ministry Representative shall give a written decision to the Contractor no later than fourteen (14) working days following receipt of the written protest.

GC 16.06 The written decision shall present the position of the Ministry to resolve the dispute. If the Contractor agrees to the written decision from the Ministry, the dispute shall have been deemed settled and resolved.

GC 16.07 If the parties do not resolve the dispute pursuant to GC 16.06, then the dispute shall proceed and be finally resolved in accordance with GC 17.00.

GC 17.00 BINDING ARBITRATION

GC 17.01 The parties agree to undertake the following steps to resolve the dispute:

(a) both parties shall appoint the same Arbitrator;

(b) the Arbitrator shall decide on the time and place to hear the dispute;

(c) the dispute shall be addressed under the rules of the British Columbia International Commercial Arbitration Centre administered in accordance with the "Procedures for cases under the BCICAC Rules" of the British Columbia International Commercial Arbitration Centre;

(d) the Contractor shall pay all arbitration costs where the awarded amount is less than one hundred and fifteen per cent (115%) of the Ministry's settlement offer, otherwise the Ministry shall pay for the arbitration costs;

(e) each party shall bear their own legal and all other costs; and

(f) the decision by the Arbitrator to resolve the dispute shall be final and binding on both parties.

GC 18.00 MINISTRY'S COVENANTS

GC 18.01 The Ministry shall compensate the Contractor only when approved by the Ministry Representative, at the rates as stipulated in this Contract, or where not specified, at the rate agreed upon as set out in the Work Order for all additions, changes or deletions to the Work.

GC 18.02 The Ministry shall make available to the Contractor all information which the Ministry Representative considers to be pertinent to the Work.

GC 18.03 The Ministry shall calculate each extended amount for an individual Item by multiplying the actual quantity for that Item, as measured or calculated in accordance with the Contract, with the Unit Price of that Item found in Schedule 7 - Approximate Quantities and Unit Prices.

GC 18.04 The Ministry shall not hold the Contractor responsible for any error, inconsistency or omission in this Contract which the Contractor may discover provided that the Contractor immediately reports any error, inconsistency or omission to the Ministry upon their discovery.

GC 19.00 CONTRACT PRICE

GC 19.01 The quantities shown in the Approximate Quantities and Unit Prices are estimated. The final Contract Price paid to the Contractor shall be the aggregate amount determined by multiplying the actual quantities for each Item by the appropriate Unit Price for that Item.

GC 19.02 Payment for any Lump Sum Item shall be made on the basis of the percentage of the Lump Sum Item which has been completed and approved by the Ministry Representative.

GC 19.03 Notwithstanding any other provisions of this Contract, the payment of money by the Ministry to the Contractor is pursuant to this Contract and is subject to the provisions of the *Financial Administration Act*.

GC 19.04 The Contractor shall not seek any changes to the Unit Price for an Item where any of the following is true:

(a) the actual quantity is within twenty per cent (20%) of the original estimated quantity; or

(b) the total cost does not exceed $20,000 as calculated by multiplying the Unit Price by the larger of the final quantity and the estimated quantity of the Item; or

(c) the Item is a Provisional Sum Item.

GC 20.00 PAYMENT TERMS

GC 20.01 The Contractor shall submit an invoice monthly for Work completed to date in accordance with Schedule 7 - Approximate Quantities and Unit Prices and any applicable Work Orders.

GC 20.02 The Ministry may adjust any invoice to reflect the Ministry Representative's estimate of the Work completed satisfactorily as of the invoice date.

GC 20.03 The Ministry shall pay the Contractor in Canadian funds.

GC 20.04 The payments as described herein shall constitute full and final payment to the Contractor for all costs and expenses associated with full and satisfactory performance of the Work, including any Extra Work authorized by a Work Order.

GC 20.05 Notwithstanding any other provision of this Contract, the Contractor shall not receive any payment from the Ministry for any Unacceptable Work, Unauthorized Work, economic loss or loss of profits.

GC 20.06 The Contractor acknowledges that payments do not represent a final evaluation or acceptance of the Work by the Ministry.

GC 20.07 Provided the Contractor is not in default under any provisions of the Contract, the Ministry shall make payments to the Contractor within thirty (30) days of receiving, accepting and making any necessary adjustments to the Contractor's invoice.

GC 20.08 If the Contract security is in the form other than a Bond, the Ministry shall release the Contract security within forty (40) days of the date on which each of the following matters have been performed or satisfied, as the case may be:

(a) the Ministry Representative has issued a Completion Certificate;

(b) a clearance letter has been received by the Ministry from Workers' Compensation Board indicating that all current assessments due from the Contractor have been paid;

(c) the Ministry Representative has received the Contractor's statutory declaration in a form as required by the Ministry; and

(d) the Contractor has provided to the Ministry Representative a written confirmation that the Contractor has accepted the final measurement of all the quantities.

GC 20.09 The Ministry may, at its discretion, retain from the contract payments sufficient monies to indemnify the Ministry completely against any losses, claims, damages, actions, causes of actions, costs and expenses that the Ministry may sustain, incur, suffer or be put to by reason of any act or omission of the Contractor arising in connection with the Work.

GC 20.10 The Ministry certifies that the property and/or services ordered and purchased under the terms of this Contract are for the use of, and are being purchased by, the Ministry with Crown funds and therefore not subject to the "Goods and Services Tax" (GST).

GC 21.00 TERMINATION

GC 21.01 Where the Contractor does not observe, perform and comply with any provisions of this Contract, the Ministry may, in its sole discretion terminate this Contract and pursue such remedies as it deems necessary.

GC 21.02 Notwithstanding any other provision of this Contract, the Ministry may, upon giving fifteen (15) days prior written notice to the Contractor, terminate this Contract.

GC 21.03 Payment for any Work completed and accepted by the Ministry Representative prior to termination shall be made to the Contractor for that portion of the amounts described in Schedule 7 - Approximate Quantities and Unit Prices, and such payment shall discharge the Ministry from all liability to the Contractor with respect to payment for that Work under this Contract.

GC 22.00 COMPLETION OF THE WORK

GC 22.01 Completion of the Work occurs when the Ministry Representative determines that the Work has been completed in accordance with this Contract and the Ministry has issued a Completion Certificate.

GC 22.02 The Contractor shall not be entitled to a Completion Certificate unless;

(a) the site has been cleaned up and restored to the satisfaction of the Ministry Representative; and

(b) the Contractor has rectified any defects as identified in writing by the Ministry Representative.

GC 23.00 EXTENSION OF THE COMPLETION DATE

GC 23.01 If the Contractor fails to complete the Work on or before the Completion Date, the Ministry may elect to extend the Completion Date by a written notice to the Contractor. If the Ministry extends the Completion Date, the Ministry may require the Contractor to pay consideration to the Ministry in the amount of $500.00 per calendar day, subject to GC 23.02, for each or any part of the calendar day after the Completion Date in effect prior to such extension.

GC 23.02 The Ministry may elect to reduce the total consideration payable and the consideration payable under GC 23.01 when:

(a) the Work is delayed and carries as a direct result of an event such as adverse weather or labour dispute which amounts to a major disabling event or circumstance; and

(b) the event is beyond the reasonable control of the Contractor in carrying out its duties, covenants and obligations under this Contract.

GC 23.03 The lack of financial viability shall not be considered an event under GC 23.02.

GC 24.00 GENERAL

GC 24.01 If any one or more provisions of the Contract, including any Supplemental Agreements or Standard Specifications conflict, then the provisions apply in the following order:

(a) Supplemental Agreements, in reverse chronological order;

(b) any Contract Addenda, in reverse chronological order;

(c) Supplemental General Conditions;

(d) Glossary of Terms:

(e) Minor Works General Conditions;

(f) Schedule 3 - Special Provisions;

(g) Appendices to Special Provisions;

(h) Schedule 7 - Approximate Quantities and Unit Prices;

(i) Schedule 4 - Drawings;

(j) Standard Specifications;

(k) Maintenance Specifications; and

(l) the remaining provisions of the Contract, including remaining Schedules.

GC 24.02 Any notice required or permitted to be given hereunder shall be delivered or mailed by prepaid registered mail to the addresses in the Contract (or at such other address as either party may from time to time designate by notice in writing to the other), and any such notice shall be deemed to be received 48 hours after mailing.

GC 24.03 Capitalized terms used herein shall have the meaning ascribed in the Glossary of Terms.

GC 24.04 In this Contract, wherever the singular or masculine is used it is as if the plural, the feminine, or the neuter, as the case may be, had been used where the context or the parties require.

GC 24.05 The Schedules form an integral part of this Contract.

GC 24.06 This Contract shall be governed by and construed in accordance with the laws of the Province of British Columbia.

GC 24.07 In this Contract, the units of measurement are:

(a) determined on the basis of the "International System of Units" established by the "General Conference of Weights and Measures"; and

(b) as defined by the *Weights and Measures Act (Canada)*.

GC 24.08 Any reference to "day" or "days" means a calendar day or days, unless a contrary intention is expressed in this Contract.

GC 24.09 Where there is a time limitation under this Contract, and the time in question for performance of an obligation expires on a Saturday, Sunday, or a holiday, the time for performance of the obligation governed by the time limitation is extended to the next day that is not a Saturday, Sunday or Holiday.

GC 24.10 In the calculation of time, the first day shall be excluded and the last day included.

GC 24.11 A reference in this Contract to a statute or to a regulation, whether or not that statute or regulation, as the case may be, has been defined, means a statute or regulation, as the case may be, of the Province of British Columbia unless otherwise stated and includes every amendment to it, every regulation made under it and any enactment passed in substitution therefor or in replacement thereof.

IN WITNESS WHEREOF a duly authorized representative of the Minister of Transportation, on behalf of Her Majesty the Queen in Right of the Province of British Columbia, has hereunto set his or her hand and the common seal of the Contractor has been hereunto affixed in the presence of its duly authorized signatories in that behalf on the date set out below:

Project Number: ____________________ Contract ID Number: ____________________

Project Description: ____________________

Date of Contract: ____________________

SIGNED on behalf of Her Majesty the Queen in Right of the Province of British Columbia

Phone:

Fax:

by a duly authorized representative of the Minister of Transportation, this

________ day of ____________, 20___

in the presence of:

(Witness)

For the Minister of Transportation

(Name and Title)

THE common seal of:

(Name of Contractor)

(Address)

(Telephone)

(Fax)

was hereunto affixed in this ________ day of

________, 20___, in the presence of:

C/S

(Witness)

Authorized Signatory for the Contractor

(Name and Title)

Specimen

INDEX BY ARTICLE
MINOR WORKS GENERAL CONDITIONS

Appendices 24
Approximate Quantities and Unit Prices 18, 19, 20, 21, 24
Award 3
BINDING ARBITRATION 17
CLAIMS REPORTING 9
Commencement Date 4
COMMENCEMENT OF THE WORK 4
Company Act 1
Completion Certificate 3, 20, 22
Completion Date 13, 23
COMPLETION OF THE WORK 22
COMPLIANCE WITH LAWS 6
CONDITION OF SITE 11
Construction Schedule 4
Contract Addenda 24
CONTRACT AND ASSIGNMENT 15
Contract Price 19
CONTRACT PRICE 19
Contract security 2, 4, 20
CONTRACT SECURITY 2
CONTRACTOR REPRESENTATIONS AND WARRANTIES 1
Disturbed Features 11
Drawings 10, 16, 24
EXTENSION OF THE COMPLETION DATE 23
Extra Work 14, 20
Financial Administration Act 19
GENERAL 24
Glossary of Terms 24
GST 20
Holiday 24
INDEMNITY 7
INDEPENDENT CONTRACTOR 5
INSPECTIONS AND WARRANTY 13
INSURANCE 8
Insurance Specifications 4, 8
Item 18, 19
Lump Sum Item 19
Maintenance Specifications 11, 24
MINISTRY'S COVENANTS 18
MINOR WORKS - RESOLVING DISPUTES 16
Minor Works General Conditions 24
PAYMENT 20
PAYMENT TERMS 20
Provisional Sum Item 19
QUALITY OF WORK 12
RISKS AND INDEMNITY 7
Schedule 2 2, 4
Schedule 3 24
Schedule 4 24
Schedule 5 13
Schedule 6 8
Schedule 7 18, 20, 21, 24
Site 4, 6, 11, 13
Special Provisions 24
SPECIFICATIONS AND MATERIALS 10
Standard Specifications 10, 24
Statutory Declaration 20
Subcontract 15
Subcontractor 7, 10
Supplemental Agreement 10, 24
Supplemental General Conditions 24
Term 3, 6
TERM 3
TERMINATION 21
Unacceptable Work 20
Unauthorized Work 20
Unit Price 18, 19
WARRANTY 13
warranty period 13
Work 1, 4, 5, 6, 7, 11, 12, 13, 14, 16, 18, 20, 21, 22, 23
Work Order 14, 18, 20
WORK ORDERS 14

C-3 Major Works (General Conditions)

MAJOR WORKS GENERAL CONDITIONS
Table of Contents

GC 1.00 GLOSSARY OF TERMS 2
GC 2.00 CONTRACTOR'S REPRESENTATIONS, WARRANTIES AND COVENANTS 2
GC 3.00 INFORMATION PROVIDED BY THE MINISTRY 3
GC 4.00 TERM 3
GC 5.00 MINISTRY APPOINTMENTS 3
GC 6.00 EMPLOYEES OF THE CONTRACTOR 4
GC 7.00 LEGAL RELATIONSHIP 4
GC 8.00 ASSIGNMENT AND SUBCONTRACTING 5
GC 9.00 SUBCONTRACTOR AND SUPPLIER DISPUTES 6
GC 10.00 DESIGNATED SUBCONTRACTOR(S) AND DESIGNATED SUPPLIER(S) 6
GC 11.00 CONDITIONS OF EQUIPMENT 7
GC 12.00 BONDS AND INSURANCE 7
GC 13.00 THIRD PARTY CONSENTS TO CHANGES 8
GC 14.00 INDEMNITY 8
GC 15.00 NOTICE OF LIABILITY AND PROPERTY INSURANCE CLAIMS 8
GC 16.00 COMMENCEMENT OF THE WORK 9
GC 17.00 PROSECUTION OF THE WORK 9
GC 18.00 STANDARD OF WORK 9
GC 19.00 ERRORS OR OMISSIONS 9
GC 20.00 INSPECTION OF THE WORK 10
GC 21.00 SAMPLES AND TESTING 10
GC 22.00 CO-OPERATION OF THE CONTRACTOR 10
GC 23.00 UTILITIES 11
GC 24.00 CONTAMINANTS 11
GC 25.00 PROTECTION OF SITE AND WORK DURING CONSTRUCTION 12
GC 26.00 MAINTENANCE OF WORK DURING CONSTRUCTION 12
GC 27.00 EMERGENCY WORK 12
GC 28.00 WORK ORDERS 13
GC 29.00 STOP WORK ORDER 13
GC 30.00 SEASONAL SHUT-DOWN 13
GC 31.00 RESUME WORK ORDERS AND COMPENSATION 14
GC 32.00 PROVISIONAL SUM AND CONDITIONAL ITEMS 15
GC 33.00 COMPLIANCE WITH THE TIME SCHEDULE 15
GC 34.00 SUBSTANTIAL COMPLETION 16
GC 35.00 TOTAL COMPLETION 16
GC 36.00 WARRANTY 17
GC 37.00 NOTICES 17
GC 38.00 CHANGES TO WORK 18
GC 39.00 CHANGES IN QUANTITIES FOR UNIT PRICE ITEMS 20
GC 40.00 ELIMINATED ITEM 21
GC 41.00 CHANGED CONDITIONS 22
GC 42.00 REIMBURSABLE DELAY 22
GC 43.00 CHANGE IN TAXES 23
GC 44.00 EXTENSION OF TIME 24
GC 45.00 CHANGE OF COMPLETION DATE 25
GC 46.00 PAYMENT 25
GC 47.00 PROVISIONAL SUM ITEMS 26
GC 48.00 CONDITIONAL ITEMS 26

GC 49.00 FORCE ACCOUNT 26
GC 50.00 COMPENSATION FOR REIMBURSABLE DELAY 28
GC 51.00 CONSEQUENTIAL LOSSES 30
GC 52.00 PROGRESS PAYMENTS 30
GC 53.00 FINAL PROGRESS PAYMENT 31
GC 54.00 HOLDBACK 31
GC 55.00 INTERIM HOLDBACK RELEASE 32
GC 56.00 FINAL HOLDBACK RELEASE 32
GC 57.00 APPROPRIATION 32
GC 58.00 DISPUTE RESOLUTION 33
GC 59.00 FORMAL CLAIM 34
GC 60.00 APPEAL 35
GC 61.00 ARBITRATION 35
GC 62.00 DEFAULT 36
GC 63.00 TERMINATION FOR REASONS OTHER THAN DEFAULT 38
GC 64.00 RECORDS 38
GC 65.00 REPORTS 38
GC 66.00 AUDIT 38
GC 67.00 CONFIDENTIALITY 39
GC 68.00 ANNOUNCEMENTS 39
GC 69.00 PROVINCIAL PROPERTY 39
GC 70.00 ENTIRE CONTRACT 40
GC 71.00 AMENDMENTS 40
GC 72.00 ADDRESS FOR NOTICES 40
GC 73.00 FURTHER ASSURANCES 40
GC 74.00 DUTY TO MITIGATE 40
GC 75.00 WAIVER 41
GC 76.00 TIME 41
GC 77.00 INTERPRETATION 41
GC 78.00 SURVIVAL OF TERMS 42
GC 79.00 SUCCESSORS AND ASSIGNS 42
GC 80.00 GOVERNING LAW 42
GC 81.00 LIMITATIONS FOR CLAIMS 42

BRITISH
COLUMBIA

PROVINCE OF BRITISH COLUMBIA
MINISTRY OF TRANSPORTATION

This Contract

BETWEEN:

HER MAJESTY THE QUEEN IN RIGHT OF
THE PROVINCE OF BRITISH COLUMBIA,
as represented by the Minister of Transportation (the "Ministry")

OF THE FIRST PART

AND:

THE CONTRACTOR as identified on the execution
page of this Contract

OF THE SECOND PART

WITNESSES THAT WHEREAS:

A. The Contractor has offered to perform the Work herein described at the price and on the terms herein set out; and

B. The Province has accepted the offer by Contractor to perform the Work at the price and on the terms herein set out;

(c) is validly executed by both the surety and the Designated Subcontractor or Designated Supplier;

(d) shows the business address of the surety for filing of claims and delivery of notices; and

(e) remains posted at the Site during the term of the Subcontract.

GC 10.05 If the Ministry becomes aware that a Designated Subcontractor or Designated Supplier is performing a Work activity but such Designated Subcontractor or Designated Supplier is not in compliance with GC 10.03 or GC 10.04, the Ministry Representative may issue a Stop Work Order for that Work activity. The Stop Work Order shall remain in effect until the Contractor brings itself into compliance with GC 10.03 and GC 10.04.

GC 10.06 The Contractor shall not be entitled to any compensation including without limitation an Extension of Time or compensation for Reimbursable Delay in connection with or as a result of a Stop Work Order under GC 10.05.

GC 10.07 The Contractor shall provide written notice to the Ministry Representative for:

(a) any change to or addition of a Designated Subcontractor or Designated Supplier; or

(b) any change to the scope of work for a Designated Subcontractor or Designated Supplier.

GC 11.00 *CONDITIONS OF EQUIPMENT*

GC 11.01 All trucks and other equipment rented by the Contractor for use on the Work shall, as far as practicable, be obtained from local residents.

GC 11.02 To qualify under GC 11.01, equipment shall:

(a) where the Contractor has a collective agreement with its employees, have an operator who is a member of or has the permission of the appropriate union bargaining unit;

(b) fulfill, in the opinion of the Ministry Representative, the specialized needs as may be required to reasonably complete the Work of the Contractor; and

(c) be registered on the Ministry's hired equipment list for the geographic area encompassing the Site, or on the Ministry's hired equipment list for an adjacent area.

GC 12.00 *BONDS AND INSURANCE*

GC 12.01 The Contractor shall comply with the requirements in Schedule 2 – Contract Securities and maintain the Bonds in force and effect until the Actual Completion Date and any longer period specified in Schedule 2 – Contract Securities.

GC 12.02 The Contractor shall comply with the requirements in Schedule 6 – Insurance and maintain the insurance in force and effect until the Actual Completion Date and any longer period specified in Schedule 6 – Insurance.

GC 12.03 If the Surety notifies either party that the Bonds are or are going to be terminated or cancelled for any reason whatsoever, the Contractor shall obtain and deliver to the Ministry forthwith upon receipt of such notification valid Bonds effective from the date of termination or cancellation of the Bonds, which comply with Schedule 2 – Contract Securities .

GC 12.04 The delivery of valid replacement Bonds by the Contractor under GC 12.03 is in addition to and does not preclude the Ministry from exercising any right, power or remedy available to the Ministry under the Contract, at law or in equity in connection with the cancellation or termination of the Bonds.

GC 32.00 *PROVISIONAL SUM AND CONDITIONAL ITEMS*

GC 32.01 The Contractor shall not proceed with any Work with respect to a Provisional Sum Item or a Conditional Item, nor be entitled to any payment for such Work, until the Ministry Representative has provided written authorization for the Contractor to proceed with such Work with respect to that Provisional Sum Item or Conditional Item, as the case may be.

GC 33.00 *COMPLIANCE WITH THE TIME SCHEDULE*

GC 33.01 The Contractor shall complete the Work in accordance with Schedule 5 - Time Schedule and any amendment thereto.

GC 33.02 If the Contractor fails to achieve completion of any specified portion of the Work on or before the corresponding Milestone Date or the Completion Date, then without limiting any other remedy available to the Ministry under the Contract, the Ministry Representative may elect to proceed with one or more of the following:

(a) terminate the Contract;

(b) where the Contractor has failed to achieve completion of the corresponding Work on or before a Milestone Date, require the Contractor to pay consideration in the amount specified in the Supplemental General Conditions as consideration for late completion for each day or part thereof between the specified Milestone Date and the actual date upon which the corresponding portion of the Work is completed;

(c) where the Contractor has failed to complete the Work on or before the Completion Date, require the Contractor to pay consideration in the amount specified in the table below as consideration for late completion for each day or part thereof between the specified Completion Date and the Actual Completion Date;

Tender Price		Amount Payable by the Contractor to the Ministry Per day
Greater than	But equal to or less than	
$0	$1,000,000	$1000
$1,000,000	$10,000,000	$2,500
$10,000,000	Unlimited	$3,500

and;

(d) extend the Completion Date or Milestone Date, as the case may be, for such period as the Ministry Representative determines, without requiring the Contractor to pay any consideration during such extended time.

GC 33.03 Should the consideration periods associated with GC 33.02(b) and GC 33.02(c) overlap, the Ministry shall waive the lesser of the two daily amounts for the overlapping days.

GC 33.04 If the Ministry elects to extend a Milestone Date or the Completion Date pursuant to GC 33.02(d), and the Contractor does not complete the Work on or before such extended Milestone Date or Completion Date then, upon written notice by the Ministry Representative to the Contractor, the Ministry may avail itself of any remedy available to the Ministry under the Contract, including without limitation one or more of the remedies specified in GC 33.02.

GC 33.05 It is a condition of any extension to the Milestone Date or the Completion Date pursuant to GC 33.02(d) that the Contractor shall proceed diligently to complete the Work.

GC 33.06 Any payment to be made by the Contractor pursuant to GC 33.00 relates directly to the performance by the Contractor of a condition, covenant, or promise in the Contract and shall not be construed by the parties as punitive but as importing a reasonable measure by mutual consent of the minimum damages caused to the Ministry by the Contractor's failure or neglect.

GC 34.00 *SUBSTANTIAL COMPLETION*

GC 34.01 The Contractor may submit a written request for a Letter of Substantial Completion to the Ministry Representative.

GC 34.02 Substantial Completion occurs when the Contractor has requested a letter of Substantial Completion pursuant to GC 34.01, and in the opinion of the Ministry Representative, all of the following conditions have been met:

(a) the facility for which the Work is being done is in, or suitable for, full use by the public and is free of any deficiencies affecting the safety of motorists, pedestrians, or workers;

(b) the value of the remaining Work is less than two percent (2%) of the Contract Price; and

(c) the Contractor is not in breach of any provision of the Contract, including the requirement of completion of the Work by the Completion Date.

GC 34.03 If the Contractor requests a Letter of Substantial Completion pursuant to GC 34.01 the Ministry Representative may inspect the Work and, if in the opinion of the Ministry Representative, Substantial Completion has occurred, issue a Letter of Substantial Completion. Only one Letter of Substantial Completion may be issued pursuant to the Contract.

GC 35.00 *TOTAL COMPLETION*

GC 35.01 Total completion occurs when the Ministry Representative issues a Completion Certificate with respect to the Work.

GC 35.02 The Contractor may submit a written request for a Completion Certificate to the Ministry Representative.

GC 35.03 The Contractor shall be entitled to a Completion Certificate when:

(a) the Contractor has completed all Work, including correction of all deficiencies in that Work identified in GC 35.03(b) to (g), but excluding correction of defects in the Work that appear during the warranty period, to the satisfaction of the Ministry Representative;

(b) the Site and any borrow pits, gravel pits, or other property occupied by the Contractor in performing the Work are clean of rubbish, equipment, surplus materials, and temporary structures and the Site is left in a neat, tidy, and presentable condition;

(c) after completion of any gravel, base, or surfacing operations, the roadway, ditches, slopes and culverts are cleaned of accumulations and reconditioned and maintained;

(d) surplus or waste aggregates at gravel deposits are piled or disposed of, as directed by the Ministry Representative;

(e) any areas from which material is removed or where stripping takes place are left in a condition suitable for routine maintenance in accordance with the Maintenance Specifications Manual by the road and bridge maintenance contractor engaged by the Ministry;

(f) waste asphalt oil, crude oil, and any Contaminants deposited or left on, in or underneath the Site by the Contractor, the Subcontractors, or the Contractor or Subcontractor's respective agents or employees, are disposed of in accordance with applicable laws and regulations and with approval of the Ministry Representative; and

(g) the Contractor has, where applicable, submitted to the Ministry Representative such documentation as is required by the Contract including, without limitation, as-built plans and a statistical summary of health and safety records as required by the Standard Specifications.

GC 35.04 If the Contractor requests a Completion Certificate, but the Work is not completely acceptable to the Ministry, the Ministry Representative shall advise the Contractor, in writing, of particular defects in the Work preventing issuance of the Completion Certificate and the Contractor shall forthwith rectify the defects to the satisfaction of the Ministry Representative.

GC 36.00 *WARRANTY*

GC 36.01 Notwithstanding any other provision of the Contract or the expiry or termination of the Contract, the Contractor warrants to the Ministry, for a period of one (1) year commencing on the earliest of the date of Substantial Completion, the Actual Completion Date, or any earlier termination date, that:

(a) all Work is free from any defect in materials and workmanship; and

(b) the Contractor shall, upon notification by the Ministry, promptly and diligently remedy any defect, to the satisfaction of the Ministry.

GC 36.02 The warranty period for the whole or a portion of the Work may be extended by a Supplemental Agreement when the Ministry approves an amendment or specific change to the requirements set out in the Contract.

GC 36.03 For any Work incomplete on the date of Substantial Completion, upon Notice from the Ministry Representative itemising the portion of incomplete Work and requiring a full warranty, the Contractor warrants to the Ministry for a period of one (1) year, commencing on the Actual Completion Date of the Work, for all such Work identified in the Notice that:

(a) it is free from any defect in materials and workmanship; and

(b) the Contractor shall, upon notification by the Ministry, promptly and diligently remedy any defect to the satisfaction of the Ministry.

GC 36.04 If a significant portion of the Work is complete and in use by the public well before the Completion Date, upon receipt of a written request from the Contractor specifying the portion of the Work which has been completed, the Ministry Representative may, by providing written confirmation to the Contractor, allow the warranty period to commence for the completed portion of the Work on the date that portion is put into use by the public.

GC 36.05 Unless the Special Provisions indicate otherwise, the Ministry shall consider a maximum of one (1) request for an early warranty start date in response to GC 36.04.

GC 37.00 *NOTICES*

GC 37.01 Except as provided in GC 37.02, any Notice shall be in writing.

GC 37.02 In addition to the Notice required by GC 37.01 and GC 37.03, a verbal Notice shall be given as soon as the party giving the Notice becomes aware of the event or circumstances which give rise to the Notice being given.

GC 58.00 *DISPUTE RESOLUTION*

GC 58.01 A dispute occurs between the Ministry and the Contractor when a difference exists between the parties as to the interpretation, application, or administration of the Contract.

GC 58.02 If a dispute occurs as contemplated in GC 58.01, the Contractor shall abide by the Ministry's decision with respect to the dispute, proceed diligently with the Work without prejudice to the Contractor's right to advance any claim it may wish to assert with respect to the dispute, and closely track all costs and impacts associated therewith.

GC 58.03 The Ministry and the Contractor agree that, both during and after the performance of the Work, each of them shall:

(a) make bona fide efforts to resolve any dispute arising between them by negotiation; and

(b) provide frank, candid, and timely disclosure of all relevant facts, information, and documents to facilitate the resolution of any dispute.

GC 58.04 The Contractor Representative shall give the Ministry Representative Notice of a dispute within seven (7) days of the circumstance which gives rise to the dispute.

GC 58.05 If the Ministry Representative and the Contractor Representative fail to resolve the dispute, the Contractor Representative shall file a statement of dispute with the Ministry Representative no later than fourteen (14) days after the date of the Notice given pursuant to GC 58.04, and which a statement of dispute shall update the information provided in the Notice to reflect any change in the Contractor's position or proposed resolution and provide any additional information that may assist in the resolution of the dispute.

GC 58.06 The Ministry Representative shall provide a written reply to the Contractor's statement of dispute within fourteen (14) days of receiving the information specified in GC 58.05. The Ministry Representative's reply shall provide the Ministry's position in trying to resolve the dispute.

GC 58.07 If the dispute remains unresolved, the Contractor shall give a Written Protest respecting the dispute to the Ministry Representative no later than thirty (30) days following the date of the Ministry Representative's reply pursuant to GC 58.06. The Written Protest shall include, without limitation:

(a) a response to each point raised in the Ministry Representative's reply as provided pursuant to GC 58.06;

(b) relevant provisions of the Contract;

(c) relevant cost estimates; and

(d) estimates of any resulting changes to Schedule 5 – Time Schedule.

GC 58.08 The Ministry Representative shall give a written decision to the Contractor no later than forty-five (45) days following receipt by the Ministry Representative of the Written Protest described in GC 58.07 either:

(a) accepting the position of the Contractor as set out in the Written Protest, in which case the Ministry shall enter into a Supplemental Agreement, as necessary;

(b) making an offer to the Contractor to settle the dispute as set out in the Written Protest by entering into a Supplemental Agreement, as necessary; or

(c) addressing each point in the Contractor's protest and rejecting the position of the Contractor as set out in the Written Protest.

GC 58.09 A Supplemental Agreement entered into pursuant to GC 58.08, constitutes full and final settlement of the dispute.

GC 58.10 If the dispute is not resolved pursuant to GC 58.08, the Contractor shall, within thirty (30) days of the Ministry Representative's written decision, provide the Ministry Representative with Notice of intent to pursue a Formal Claim.

GC 59.00 *FORMAL CLAIM*

GC 59.01 If the dispute is not resolved by the decision of the Ministry Representative, pursuant to GC 58.08, and the Contractor has provided the Notice of intent pursuant to GC 58.10, the Contractor Manager may file a Formal Claim with the Ministry Manager no later than ninety (90) days following the issuance of the Completion Certificate.

GC 59.02 A Formal Claim shall be in writing, and shall set out in sufficient detail the particulars of the dispute so as to reasonably enable the Ministry Manager to ascertain the basis and the amount of the dispute. A Formal Claim shall include the following information:

- **(a)** Project and contract number;
- **(b)** description of the Work;
- **(c)** detailed description of the dispute providing all necessary dates, location, and Items affected by the Formal Claim;
- **(d)** date in which the circumstances which gave rise to the Formal Claim arose;
- **(e)** name of each official or employee of the Ministry involved in or knowledgeable about the Formal Claim;
- **(f)** relevant provisions of the Contract which support the Formal Claim and the reasons therefor;
- **(g)** in the case of a Formal Claim relating to a decision of the Ministry Representative, a detailed description of all of the relevant facts supporting the position of the Contractor in connection with that decision;
- **(h)** identification of any documents and particulars of any oral communications that support the Formal Claim;
- **(i)** copies of any documents identified pursuant to GC 59.02(h), other than documents of the Ministry and documents previously furnished to the Ministry by the Contractor, that support the Formal Claim;
- **(j)** if the Contractor seeks a modification to Schedule 5 - Time Schedule, the Contractor shall provide the particulars of the modification as well as the reasons therefor;
- **(k)** if the Contractor seeks additional compensation, the exact amount and a breakdown of that amount separated into the following categories:
    - **(i)** direct labour;
    - **(ii)** direct materials;
    - **(iii)** direct Contractor and Subcontractor equipment with rates claimed for each described piece of equipment based on hours and dates of use and calculated in accordance with the Equipment Rental Rates (Less Operator);

- (iv) direct All Found Equipment with rates claimed for each described piece of equipment based on the hours and dates of use and calculated in accordance with the Equipment Rental Rates;
- (v) overhead (general and administrative);
- (vi) claims of Subcontractors in detail as described in this paragraph;
- (vii) standby; and
- (viii) other categories, if specified by the Contractor or the Ministry.

GC 59.03 The Ministry Manager shall give a written decision to the Contractor Manager no later than ninety (90) days after receiving the Formal Claim stating either that:

- (a) the Ministry accepts the position of the Contractor as set out in the Formal Claim, in which case the Ministry shall enter into a Supplemental Agreement;
- (b) the Ministry makes an offer to the Contractor to settle the Formal Claim by entering into a Supplemental Agreement; or
- (c) the Ministry rejects the position of the Contractor as set out in the Formal Claim.

GC 59.04 A Supplemental Agreement entered into pursuant to GC 59.03 constitutes full and final settlement of the Formal Claim.

GC 59.05 If the decision of the Ministry Manager does not resolve the dispute, the Contractor may, not later than thirty (30) days following receipt of the decision, file a written appeal to the Deputy Minister of Transportation (the "Deputy Minister") or refer the dispute directly to arbitration.

GC 60.00 *APPEAL*

GC 60.01 The Deputy Minister shall give a written decision to the Contractor not later than sixty (60) days following receipt by the Deputy Minister of the appeal described in GC 59.05, stating that:

- (a) the decision of the Ministry Manager, pursuant to GC 59.03, is reversed, in which case the Ministry shall enter into a Supplemental Agreement, as necessary; or,
- (b) the decision of the Ministry Manager, pursuant to GC 59.03, is affirmed.

GC 60.02 A Supplemental Agreement entered into pursuant to GC 60.01 constitutes a full and final settlement of the Formal Claim.

GC 60.03 If the decision of the Deputy Minister does not resolve the dispute, the Contractor may, not later than thirty (30) days following receipt of the decision, refer the dispute to arbitration.

GC 61.00 *ARBITRATION*

GC 61.01 If the dispute is not resolved in accordance with GC 60.00 or in lieu of an appeal to the Deputy Minister as described in GC 60.00, the dispute shall be referred to and finally resolved by binding arbitration:

- (a) by a single arbitrator appointed by the parties;
- (b) at a place agreed to by the parties; and
- (c) under the rules of the British Columbia International Commercial Arbitration Centre for the conduct of domestic commercial arbitration.

C-4 Condition of Tender

Conditions of Tender

TABLE OF CONTENTS

CT1. INTERPRETATION AND INVITATION TO TENDER – SUPPLEMENTAL CONDITIONS OF TENDER 2
CT2. USE OF BC BID ESERVICE 2
CT3. BASIS OF TENDERS 2
CT4. CLARIFICATION 3
CT5 ADDENDA 6
CT6 BID SECURITY 6
CT7 COMPLETION OF TENDERS 7
Use of Forms Provided by the Ministry 7
Tender Form 7
Schedule of Approximate Quantities and Unit Prices 7
Tender Envelope 8
CT8 DELIVERY OF TENDERS 9
CT9 REVISION TO TENDER 9
Form and Content (Hard Copy Delivery Method) 10
Revisions by Letter (Hard Copy Delivery Method) 10
Revisions by Facsimile (Hard Copy Delivery Method) 11
Form and Content (BC Bid eService Delivery Method) 11
Multiple Revisions 11
Amount of Bid Security 12
CT10 WITHDRAWAL OF TENDERS 12
Form and Content (Hard Copy Delivery Method) 12
Withdrawals by Letter (Hard Copy Delivery Method) 12
Withdrawals by Facsimile (Hard Copy Delivery Method) 13
Form and Content (BC Bid eService Delivery Method) 13
CT11 DELIVERY AND RECEIPT 13
CT12 OPENING OF TENDERS 14
CT13 EVALUATION OF TENDERS 14
Disqualification 15
Bid Security 15
Determination of Tender Price 15
CT14 BIDDER'S CAPACITY TO PERFORM 15
CT15 RIGHT NOT TO AWARD 16
CT16 ACCEPTANCE 17
CT17 PRIOR TO COMMENCEMENT OF WORK 17
CT18 DEFAULT 17
Event of Default 17
Demand on Bid Security 17
CT19 DISPUTE RESOLUTION 18
CT20 TIME LIMITATION ON CLAIMS 18
CT21 LIMITATION OF DAMAGES 18
CT22 INTERPRETATION AND DISCRETION 18
CT23 APPROPRIATION 19
CT24 CONFIDENTIALITY 19
CT25 GENERAL 19

CT1. INTERPRETATION AND INVITATION TO TENDER – SUPPLEMENTAL CONDITIONS OF TENDER

1.1 In these Conditions of Tender, unless otherwise expressly set out, a capitalized word shall have the meaning given to it in the Glossary of Terms.

1.2 The Glossary of Terms is hereby incorporated by reference into and forms a part of these Conditions of Tender.

1.3 The Invitation to Tender - Supplemental Conditions of Tender contained in the Tender Document Package are hereby incorporated by reference into and form a part of these Conditions of Tender and where any term set out in the Invitation to Tender - Supplemental Conditions of Tender conflicts with any term set out in these Conditions of Tender, the term set out in these Conditions of Tender shall prevail.

CT2. USE OF BC BID ESERVICE

2.1 The BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions are hereby incorporated by reference into and form a part of these Conditions of Tender, and

(a) these Conditions of Tender are not in any way intended to, and do not in any way, limit or narrow the application, interpretation or operation of the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions, and

(b) the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions are not in any way intended to, and do not in any way, limit or narrow the application, interpretation or operation of these Conditions of Tender.

2.2 Subject to CT2.3 and CT2.4, the Bidder must deliver its Tender, including for greater clarity, any and all Revisions, and any notice of withdrawal, by using only one of the following two delivery methods, which the Bidder may, at its option, choose:

(a) the BC Bid eService Delivery Method; or

(b) the Hard Copy Delivery Method, and

the Bidder shall not combine aspects of the BC Bid eService Delivery Method with the Hard Copy Delivery Method.

2.3

(a) If the Bidder chooses the BC Bid eService Delivery Method, then

  (i) the Bidder must deliver the Tender, including for greater clarity, any and all Revisions, and any notice of withdrawal, using the BC Bid eService Delivery Method, and

  (ii) the Bidder must deliver the Bid Security using the Hard Copy Delivery Method.

(b) If the Bidder chooses the Hard Copy Delivery Method, then the Bidder must deliver the Tender, including for greater clarity, any and all Revisions and the Bid Security, and any notice of withdrawal using the Hard Copy Delivery Method.

2.4 The Bidder must not deliver the Bid Security using the BC Bid eService Delivery Method. The Bidder must deliver the Bid Security, including any part of the Bid Security, in accordance with CT6, using only the Hard Copy Delivery Method.

2.5 If the Bidder chooses the BC Bid eService Delivery Method, then the Bidder must have an "e-Bidding Key" as defined in the BC Bid eService Terms and Conditions.

2.6 Without in any way whatsoever limiting the BC Bid Supplier Terms and Conditions, including without limitation, sections 8 and 9 set out therein, or the BC Bid eService Terms and Conditions, including without limitation, sections 13, 14, and 15 set out therein,

(a) the Bidder is solely responsible for reviewing any guidelines, the BC Bid Supplier Terms and Conditions and the BC Bid eService Terms and Conditions applying to and governing the use of the BC Bid eService; and

(b) the Ministry shall in no way whatsoever be responsible or liable, including in contract or tort, for any mistakes, errors, omissions, oversights, statements, representations, or warranties in any guideline, guidance or information, written or oral, given to Bidders by or on behalf of the Ministry regarding or in connection with the BC Bid eService, including without limitation, the use of the BC Bid eService or the BC Bid eService Delivery Method, further including without limitation, where such mistakes, errors, omissions, oversights, statements, representations, or warranties, lead or contribute, directly or indirectly, to a Bidder making mistakes, errors, omissions or oversights, or the Bidder's Tender being disqualified.

2.7 Without in any way whatsoever limiting the BC Bid eService Terms and Conditions or the BC Bid Supplier Terms and Conditions, or the responsibility of the Bidder to read and comply with the terms set out therein,

(a) the Bidder must take note of section 5 of the BC Bid eService Terms and Conditions that reads as follows:

> "5. The Bidder agrees that if its e-Bidding Key is entered incorrectly, or is invalid at any applicable closing times or dates regardless of when received by Us, then any bids, proposals or other communications that the e-Bidding Key is associated with will not be considered or evaluated.",

and,

(b) the Bidder must take note of section 6 of the BC Bid Supplier Terms and Conditions that reads as follows:

> "6. If you have a valid BC Bid® electronic signature key ("e-Bidding Key") and you are creating an electronic response to a posted opportunity, you will be given three attempts to enter the correct e-Bidding Key sequence. You agree that, if, on the third attempt, the e-Bidding Key is incorrectly entered, the BC Bid system will prohibit you from electronic bidding until such time that your account has been re-activated by the Service. You agree that your organization's primary contact will be responsible for contacting the Service to reinstate a user account that has been suspended for whatever reason.".

CT3. BASIS OF TENDERS

3.1 The Bidder, by delivering a Tender, irrevocably agrees that,

(a) the Bidder has received, read, examined and understood the entire Tender Document Package, including without limitation, all the terms of these Conditions of Tender and any and all Addenda,

(b) the Unit Prices, Lump Sum Prices and Extended Amounts for each Tender Item, and the Tendered Site Occupancy Days and the Tendered Site Occupancy Cost if any, stated on the Bidder's Schedule of Approximate Quantities and Unit Prices, as may be adjusted by Revision, and as calculated by the Ministry, in accordance with these Conditions of Tender, shall be binding on the Bidder,

(c) the Bidder is bound by the terms of these Conditions of Tender and any and all Addenda, and

(d) the Bidder waives any right to clarification of any aspect of any information in the Tender Document Package, including without limitation, these Conditions of Tender and any and all Addenda.

3.2 The Bidder, by delivering a Tender, represents and warrants that:

(a) the Bidder has received, ensured the completeness of, read, understood and accepted the Tender Document Package, including for greater clarity, any documents incorporated by reference into the Tender Document Package, and any and all Addenda;

(b) except as set out in CT3.5 and CT3.6 and only to the extent expressly set out therein, the Bidder has not relied upon any representation or warranty by the Ministry with respect to the completeness, reliability, sufficiency, accuracy or relevance of any information, or any interpretation derived from any such information, set out in or otherwise provided in the Tender Document Package, or the General Reference Documents, or any analysis or interpretation thereof, and any reliance thereon or use made thereof by the Bidder shall be at the sole risk of the Bidder;

(c) the Bidder has had sufficient opportunity to investigate, has made all such investigations as the Bidder, in its sole discretion, has determined are necessary, and has fully investigated and satisfied itself of every condition relating to or affecting the Work, including but not limited to any design requirements, the Site conditions, or the labour, equipment, material and any other resources to be provided to perform the Work and the Contract, and the Bidder assumes any and all risks relating to or regarding all such conditions, whether or not any such conditions are revealed by any information available to, or investigations undertaken by, the Bidder;

(d) save and except for the specific information provided by the Ministry as set out in CT3.5 and CT3.6, the Bidder's investigations have been based on its independent examination, experience, knowledge, information, and judgment, and not upon any statement, representation, or information made or given by or on behalf of the Ministry;

(e) the Tender, including for greater clarity, any part of the Tender Price, the Tendered Site Occupancy Cost, and the Total Tender Cost, is not based upon the anticipated approval of any Value Engineering Proposal; and

(f) the Bidder has the experience, knowledge, equipment, skills and resources necessary to perform and complete the Work and the Contract.

3.3 Any and all investigations shall be made at the Bidder's own risk and the Bidder shall indemnify and save harmless the Ministry, its officers, employees and agents, even where the Ministry or its officers, employees and agents are negligent, for any loss, damage, cost, expense (including without limitation, legal defence costs and expenses), claim, liability, demand, fine, penalty, assessment, or levy suffered or incurred by the Bidder, the Ministry, or any third party arising, either directly or indirectly, from the Bidder's investigation, including from any acts or omissions, negligent or otherwise, of the Ministry, its officers, employees and agents, which indemnity shall survive subsequent to any Award of the Contract, or any cancellation or termination of this Tender Call.

3.4 The Bidder shall be responsible for examining and inspecting the General Reference Documents and the Contract Specific Reference Documents, and for ensuring that all documents and materials listed are complete, available and present at the location or locations specified in the Invitation to Tender - Supplemental Conditions of Tender.

3.5 Any geotechnical investigation datum and test results provided in the borehole and test pit logs contained within the Tender Document Package and the Contract Specific Reference Documents are a reasonable representation of the conditions encountered at the specific locations investigated on the dates of the investigations, and may be relied upon by the Bidder solely to that extent and solely in that manner.

3.6 Any survey point datum, but not interpolated digital terrain models, contours and cross-sections derived therefrom, contained within the Tender Document Package and the Contract Specific Reference Documents are a reasonable representation of the individual points surveyed at the time of such survey, and may be relied upon by the Bidder solely to that extent and solely in that manner.

3.7 Except as set out in CT3.5 and CT3.6 and only to the extent expressly set out therein, the Ministry makes no representation or warranty and has no responsibility or liability, with respect to the completeness, reliability, sufficiency, accuracy or relevance of any information, or any interpretation derived from any such information, set out in or otherwise provided in the Tender Document Package, the Contract Specific Reference Documents or the General Reference Documents, or any analysis or interpretation thereof, and any reliance thereon or use made thereof by the Bidder shall be at the sole risk of the Bidder.

3.8 Unless otherwise specified in the Tender Document Package, the General Reference Documents and the Contract Specific Reference Documents are available in the manner and at the locations described in the definitions of General Reference Documents and the Contract Specific Reference Documents set out in the Glossary of Terms. The Ministry will not provide copies of any General Reference Documents. The Ministry will provide copies for viewing by Bidders, of only those Contract Specific Reference Documents that the Tender Document Package expressly states will be provided by the Ministry.

3.9 Subject to the express terms of the Special Provisions, the Standard Specifications shall apply to the performance of the Contract, including without limitation, to the performance of and the measurement of the Work.

3.10 The Contract shall include the General Conditions set out in the Tender Document Package.

3.11 The Approximate Quantities stated in the Schedule of Approximate Quantities and Unit Prices, save and except for the Tendered Site Occupancy Days and the Daily Site Occupancy Cost if any, are estimates only and are prepared exclusively for use by the Ministry to establish the Tender Price for the purpose of comparing Tenders. The actual quantities may increase or decrease. The elimination of Tender Items, or an increase or decrease in quantities shall not invalidate the Tender, the Contract, or any Unit Price.

3.12 (a) If specified in the Invitation to Tender - Supplemental Conditions of Tender, a pre-Tender meeting shall be held.

(b) If the pre-Tender meeting is specified to be mandatory,

(i) a representative of the Bidder must attend the pre-Tender meeting and the Bidder must ensure that its name, as it will appear on the face of the Tender Envelope is listed on the Ministry pre-Tender meeting attendance record, and

(ii) any Tender, including any Revision, delivered by a Bidder whose name, as it appears on the face of the Tender Envelope, is not listed on the Ministry pre-Tender meeting attendance record, shall not be opened and shall be returned, or if opened, shall not be considered or evaluated but shall be disqualified.

(c) Any information, statements, representations, data or conclusions, verbal or otherwise, obtained from the Ministry or any other party, or made available, at any pre-Tender meeting is not stated, represented or warranted to be accurate, complete, relevant, or reliable by the Ministry and shall not be considered or treated as such, or relied upon by the Bidder. The Ministry may take notes at any such pre-Tender meeting for its sole use, and the Ministry shall be under no obligation whatsoever to make minutes or copies of such notes available to any Bidder and, may, in its sole discretion refuse to make minutes or copies of such notes available to any Bidder.

CT4. CLARIFICATION

4.1 Requests for clarification of any part of the Tender Document Package by the Bidder shall be delivered in writing by courier, fax, or electronic mail, not less than seven (7) days before the Closing Time, in accordance with the following:

- (a) with respect to the Work, to the Contact Person identified in the Invitation to Tender - Supplemental Conditions of Tender; and
- (b) with respect to the Tender Call, to the Administrative Contact Person identified in the Invitation to Tender - Supplemental Conditions of Tender.

4.2 The Ministry may in its sole discretion respond to any such requests for clarification. If the Ministry elects to respond to any such requests for clarification, it will do so in accordance with CT5.3, by Addenda which set out the request for clarification and the response to such requests in a "Question and Answer" format without setting out the name of the person who delivered the request.

4.3 Responses to requests for clarification made in any manner other than as described in CT4.2, including without limitation, verbal, in person, via mail, via fax, or electronic mail, by any employees, agents or representatives of the Ministry including without limitation, the Contact Person or the Administrative Contact Person, shall not constitute an official response by the Ministry and shall not be relied on in any way by any person for any purpose whatsoever and shall not be binding upon the Ministry in any way whatsoever.

4.4 It is the sole responsibility of the Bidder to monitor the BC Bid eService email notifications referenced in CT5.3(b), the BC Bid eService, and the BC Bid Website on an ongoing basis to keep itself informed of any such clarifications.

4.5 The Ministry shall have no responsibility or liability whatsoever, including in contract or in tort, in regard to or in connection with any decision to respond or not to respond to requests for clarification, the timing of issuing any Addenda setting out the responses to any such requests, the quality or content of any such responses or the failure of a Bidder to keep itself informed of any such responses.

CT5 ADDENDA

5.1 The Ministry may, in its sole discretion, at any time and from time to time, amend any part or parts of the Tender Document Package by means of Addenda. If issued through the BC Bid eService, Addenda shall be identified as "Amendments". Other than by Addenda, including for greater clarity, BC Bid eService Amendments, no part of the Tender Document Package may be amended in any other way by any person.

5.2 Other than as set out in an Addendum, any information pertaining to the Tender Document Package, or this Tender Call, including without limitation, to the Work, or to the Contract, that is offered or obtained from any source, including from the Contact Person or from the Administrative Contact Person, is not official and shall not be relied on in any way by any person for any purpose whatsoever and shall not be binding upon the Ministry in any way whatsoever.

5.3 Subject to these Conditions of Tender,

- (a) any and all Addenda shall be delivered to each Planholder, and
- (b) if the Bidder has registered with the BC Bid eService to receive email notifications in accordance with the BC Bid eService requirements, or if the Bidder has confirmed that it wishes to be notified of Addenda by clicking on the "Send Me Amendments" option in the Invitation to Tender – Supplemental Conditions of Tender, then the BC Bid eService shall send the Bidder notifications of such Addenda, via e-mail containing a referring web-link to

such Addenda.

5.4 Notwithstanding any other term of these Conditions of Tender, the Bidder shall be solely responsible to continually monitor the BC Bid eService email notifications referenced in CT5.3(b), the BC Bid eService, and the BC Bid Website on an ongoing basis to keep itself informed of any and all Addenda, and the Ministry shall be neither responsible nor liable in any way whatsoever, including in contract or in tort, for the failure of the Bidder to receive or to keep itself informed of any such Addenda, at all or in a timely manner.

CT6 BID SECURITY

6.1 The Bidder must deliver, as part of its Tender, Bid Security having a value and in a form that complies with the terms of the Schedule entitled "Tender Securities" as set out in the Tender Document Package.

6.2 If the Bidder delivers its Tender using, either, the BC Bid eService Delivery Method or the Hard Copy Delivery Method, the originals of the Bid Security must be delivered to the Closing Location before the Closing Time by hand or by courier, and

(a) if the Bidder delivers its Tender using the BC Bid eService Delivery Method, the Bid Security must be delivered in a sealed envelope that clearly and legibly has identified on its face:

(i) the heading "Tender Bid Security";

(ii) the full legal name of the Bidder; and

(iii) the Project Name and, or the Project Number, as specified in SCT2, and

(b) if the Bidder delivers its Tender using the Hard Copy Delivery Method, the Bid Security must be delivered in the sealed Tender Envelope.

CT7 COMPLETION OF TENDERS

Use of Forms Provided by the Ministry

7.1 The Bidder must deliver its Tender on original or unaltered copies of the forms specified by the Ministry. Any information provided by the Ministry on any form must not be altered by the Bidder, or any person, except the Ministry. If the Ministry amends the Tender Document Package by replacing any form or forms, the Bidder must deliver the replacement form or forms, as the case may be, as part of its Tender.

7.2 Unless otherwise expressly set out, the Bidder must complete all forms in full and

(a) if the Bidder delivers its Tender using the Hard Copy Delivery Method, then the Bidder must complete all forms in full by typing or printing legibly in ink on all such forms, and any adjustments, changes, or corrections to information provided by the Bidder on any such form must be initialed by an Authorized Representative of the Bidder; or

(b) if the Bidder delivers its Tender using the BC Bid eService Delivery Method, then the Bidder must complete all forms in full by entering the required information.

Tender Form

7.3 If the Bidder delivers its Tender using the Hard Copy Delivery Method, then

(a) the Bidder must set out on the Tender Form,

(i) its full legal name,

(ii) the date of the Tender Form

(iii) the name of the Authorized Representative of the Bidder, and

(iv) the Total Tender Cost, and

the Tender Form must be signed by an Authorized Representative of the Bidder, and

(b) the Bidder should include the complete mailing address, phone number and fax number of the Bidder, on the Tender Form.

7.4 If the Bidder delivers its Tender using the BC Bid eService Delivery Method, then the use of the e-Bidding Key is the legal equivalent to its authorized signature and constitutes the Bidder's authorized signature confirming the Bidder's agreement to be bound by the terms and conditions of this Tender Call, including for greater clarity, these Conditions of Tender, and by the statements and representations to which the e-Bidding Key is affixed, including for greater clarity, the Bidder's Tender.

Schedule of Approximate Quantities and Unit Prices

7.5 All prices, including Unit Prices, Provisional Sums, and Lump Sum Prices shall be deemed to be inclusive of all applicable costs, including any and all license costs, fees, taxes or duties in effect at the Closing Time, cash allowances, and contingencies. All prices, including Unit Prices, Provisional Sums, and Lump Sum Prices must be stated in the lawful money of Canada. Conversion of Quantities is not permitted (e.g., conversion of "price per litre" to "price per kilolitre" is not permitted). Conversion of metric units to imperial units or vice versa is not permitted.

7.6 In the Schedule of Approximate Quantities and Unit Prices, the Bidder must complete

(a) all blank spaces in the column under the heading "Unit Price" and all blank spaces in the column under the heading "Extended Amount" for each Unit Price Item;

(b) all blank spaces in the column under the heading "Extended Amount" for each Lump Sum Item; and

(c) in a Tender Call in which the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy and the Ministry requires the submission of Tendered Site Occupancy Days and has provided a Daily Site Occupancy Cost, all blank spaces in the column entitled "Approximate Quantity" in Part B for the Tendered Site Occupancy Days and all blank spaces in the column entitled "Extended Amount" for the Tendered Site Occupancy Cost.

7.7 **(a)** If the Ministry amends the Tender Document Package by replacing the Schedule of Approximate Quantities and Unit Prices, the Bidder must deliver the replacement Schedule of Approximate Quantities and Unit Prices completed in accordance with these Conditions of Tender.

(b) If the Bidder delivers its Tender using the Hard Copy Delivery Method, the Bidder shall not deliver any replacement Schedule of Approximate Quantities and Unit Prices by facsimile transmission but may deliver the replacement Schedule of Approximate Quantities and Unit Prices, by hand or courier,

(i) enclosed in an envelope, that clearly and legibly has identified on its face,

(A) the heading "Schedule of Approximate Quantities and Unit Prices",

(B) the full legal name of the Bidder, and

(C) the Project Name and, or the Project Number, as specified in SCT2, and

that must be delivered to and received at the Closing Location before the Closing Time, or

(ii) as part of a replacement Tender in accordance with CT8.6,

Tender Envelope

7.8 If the Bidder delivers its Tender using the Hard Copy Delivery Method, then the Bidder must clearly and legibly print or type on the face of the Tender Envelope

(a) the full legal name of the Bidder; and

(b) the Project Name and, or the Project Number, as specified in SCT2, and

the Bidder must deliver its Tender in the Tender Envelope provided in the Tender Document Package.

7.9 If the Bidder delivers its Tender using the BC Bid eService Delivery Method, then the Bidder must ensure that the Tender Envelope contains a fully completed Schedule of Approximate Quantities and Unit Prices.

CT8 DELIVERY OF TENDERS

8.1 The Ministry may in its sole discretion, from time to time and at any time on or before the Closing Date and before the Closing Time, extend the Closing Date and Closing Time.

8.2 (a) The calendar and clock showing on the BC Bid Website shall govern the delivery of Tenders using the BC Bid eService Delivery Method with respect to whether the Bidder's Tender, including for greater clarity, any and all Revisions, has been delivered and received on or before the Closing Date and before the Closing Time, and the BC Bid Website clock shall be set as specified in the Invitation to Tender – Supplemental Conditions of Tender.

(b) The calendar and clock at the Closing Location whether accurate or not, shall govern the delivery of Tenders using the Hard Copy Delivery Method, and the delivery of the Bid Security in connection with a Tender that has been delivered using the BC Bid eService Delivery Method, with respect to whether the Bidder's Tender, including for greater clarity, any and all Revisions, or the Bidder's Bid Security in the case of a Tender delivered using the BC Bid eService Delivery Method, has been delivered and received before the Closing Time.

8.3 If the Bidder delivers its Tender using the Hard Copy Delivery Method, then the Bidder shall ensure that

(a) the Tender Form with the original execution by an Authorized Representative on behalf of the Bidder, and fully completed as required by these Conditions of Tender,

(b) the original of the Schedule of Approximate Quantities and Unit Prices, or, if the Ministry has amended the Tender Document Package by replacing the Schedule of Approximate Quantities and Unit Prices, the original of the replacement Schedule of Approximate Quantities and Unit Prices, completed as required on the form and by these Conditions of Tender, and

(c) the original of the Bid Security, and if the Bid Security is a Bid Bond, then the original of the Bid Bond duly executed on behalf of the Surety,

are included in the Tender Envelope prior to sealing and are delivered to and received at the Closing Location before the Closing Time.

8.4 If the Bidder delivers its Tender using the BC Bid eService Delivery Method, then the Bidder must ensure that,

(a) the Tender Form is fully completed as required on the form and by these Conditions of Tender,

(b) the Tender Envelope, including the Schedule of Approximate Quantities and Unit Prices, or if the Ministry has amended the Tender Document Package by replacing the Schedule of Approximate Quantities and Unit Prices, the replacement Schedule of Approximate Quantities and Unit Prices, is fully completed as required on the form and by these Conditions of Tender,

(c) such Tender Form and Tender Envelope are delivered to and received by the BC Bid eService in accordance with these Conditions of Tender, including for greater clarity, the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions, before the Closing Time, and

(d) the original Bid Security duly executed on behalf of the Surety, is enclosed in a sealed envelope that clearly and legibly has identified on its face:

- **(i)** the heading "Tender Bid Security";
- **(ii)** the full legal name of the Bidder; and
- **(iii)** the Project Name and, or the Project Number, as specified in SCT2 and

such sealed envelope containing the original Bid Security is delivered to and received at the Closing Location before the Closing Time.

8.5 The Bidder's Tender shall be considered to have been delivered on or after the Closing Time and shall not be considered or evaluated but shall be disqualified, if the transmission of the Tender using the BC Bid eService Delivery Method begins before the Closing Time and is completed on or after the Closing Time.

8.6 If the Bidder delivers more than one Tender, each Tender delivered in accordance with these Conditions of Tender and received by the BC Bid eService or at the Closing Location, as the case may be, before the Closing Time shall be deemed to have been delivered in the chronological order received, and each such Tender delivered by the same Bidder shall be considered to supercede and replace in its entirety any and all prior Tenders delivered by the same Bidder.

CT9 REVISION TO TENDER

9.1 The Bidder shall only amend its Tender by delivering a Revision in compliance with these Conditions of Tender.

Form and Content (Hard Copy Delivery Method)

9.2 If the Bidder delivers its Tender using the Hard Copy Delivery Method, then Revisions must:

- **(a)** be in writing;
- **(b)** be clearly identified with
  - **(i)** the heading "Revision to Tender",
  - **(ii)** the Bidder's full legal name, and
  - **(iii)** the Project Name and, or Project Number specified in SCT2;
- **(c)** clearly identify each form that the Bidder desires to amend,
- **(d)** clearly identify each Tender Item that the Bidder desires to amend, and
  - **(i)** if the Tender Item is a Unit Price Item, then describe the amendment as the amount by which the Unit Price, as it may have been revised by a preceding Revision, should be increased or decreased,
  - **(ii)** if the Tender Item is a Lump Sum Item, then describe the amendment as the amount by which the corresponding Extended Amount, as it may have been revised by a preceding Revision, should be increased or decreased, and
  - **(iii)** if the amendment is to the Tendered Site Occupancy Days, then describe the amendment as the number of days by which the Tendered Site Occupancy Days, as

it may have been revised by a preceding Revision, should be increased or decreased;

(e) be signed by an Authorized Representative on behalf of the Bidder, and

(f) be delivered to and received at the Closing Location before the Closing Time using the Hard Copy Delivery Method, and

Revisions should also state the total amount by which the Tender Price, the Tendered Site Occupancy Cost if any, or the Total Tender Cost, as the case may be, should be increased or decreased by each Revision, but the Ministry shall determine the actual increase or decrease to the Tender Price, the Tendered Site Occupancy Cost, if any, and the Total Tender Cost, in accordance with these Conditions of Tender, including by applying the information provided by the Bidder pursuant to CT9.2(c) and (d).

Revisions by Letter (Hard Copy Delivery Method)

9.3 If the Bidder delivers its Tender using the Hard Copy Delivery Method, then Revisions may be delivered by hand or courier, in which case, each such Revision must be delivered to and received at the Closing Location before the Closing Time enclosed in an envelope, that clearly and legibly has identified on its face,

(a) the heading "Revision to Tender"

(b) the full legal name of the Bidder, and

(c) the Project Name and, or the Project Number, as specified in SCT2.

Revisions by Facsimile (Hard Copy Delivery Method)

9.4 If the Bidder delivers its Tender using the Hard Copy Delivery Method, then Revisions may be delivered by facsimile, in which case, each such Revision must be delivered to the facsimile number specified in the Invitation to Tender - Supplemental Conditions of Tender as the facsimile number for Revisions, before the Closing Time, and each such Revision must have clearly and legibly identified on the first page of the facsimile,

(a) the heading "Revision to Tender",

(b) the full legal name of the Bidder, and

(c) the Project Name and, or the Project Number, as specified in SCT2.

9.5 **(a)** The Bidder's Revision shall be considered to have been delivered on or after the Closing Time, and shall not be considered or evaluated, but shall be disqualified, if the transmission of the Revision by facsimile begins before the Closing Time and is completed on or after the Closing Time.

(b) The Ministry does not in any way whatsoever guarantee, and makes no representation or warranty whatsoever, as to the confidentiality of any Revision delivered by facsimile.

Form and Content (BC Bid eService Delivery Method)

9.6 If the Bidder delivers its Tender using the BC Bid eService Delivery Method, then

(a) any and all Revisions must be in writing, in the form of replacement amended Tender Forms and replacement amended Tender Envelopes provided for by clicking on the "Amendments" option in the Tender Envelope, and

(b) the Bidder must ensure that

- **(i)** each such replacement amended Tender Form is fully completed, and
- **(ii)** each such replacement amended Tender Envelope, including the Schedule of Approximate Quantities and Unit Prices, is fully completed, and

are delivered to and received by the BC Bid eService in accordance with these Conditions of Tender, including for greater clarity, the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions, before the Closing Time.

9.7 The Bidder's Revision shall be considered to have been delivered on or after the Closing Time and shall not be considered or evaluated but shall be disqualified, if the transmission of the Revision using the BC Bid eService Delivery Method begins before the Closing Time and is completed on or after the Closing Time.

Multiple Revisions

9.8 **(a)** Bidders who deliver their Tender using the Hard Copy Delivery Method, should number each Revision sequentially.

(b) Unless the Bidder clearly and legibly specifies to the contrary on the face of each Revision each Revision shall be deemed to have been delivered by the Bidder in the chronological order received.

Amount of Bid Security

9.9 The Bidder must ensure that the total value of the Bid Security complies with the requirements of the Schedule entitled "Tender Securities" as set out in the Tender Document Package, and that the total value of the Bid Security reflects any change to the Tender Price as a result of any and all Revisions, including as a result of the delivery of any and all replacement forms, including any replacement Schedule of Approximate Quantities and Unit Prices.

9.10 If the terms of the Schedule entitled "Tender Securities" as set out in the Tender Document Package, permit the delivery of a bank draft, certified cheque or money order in connection with this Tender Call, then the Bidder may deliver additional bank drafts, certified cheques or money orders, as the case may be, in accordance with these Conditions of Tender, including for greater clarity CT6, to ensure that the total value of the Bid Security reflects any change to the Tender Price as a result of any and all Revisions, including any and all replacement Schedules of Approximate Quantities and Unit Prices.

9.11 If as a result of any Revisions, including any and all replacement Schedules of Approximate Quantities and Unit Prices, the total value of the Bid Security delivered by the Bidder exceeds the value required in the Schedule entitled "Tender Securities" as set out in the Tender Document Package, the Bidder shall not be permitted to withdraw any part of the Bid Security delivered.

CT10 WITHDRAWAL OF TENDERS

10.1 The Bidder shall only withdraw its Tender by delivering a notice of withdrawal in compliance with these Conditions of Tender on or before the Closing Date and before the Closing Time, and in such case, the Ministry shall return the withdrawn Tender, including any Bid Security, to the Bidder after the Closing Time.

10.2 Any Tender not withdrawn by the Bidder in accordance with these Conditions of Tender before the Closing Time, shall become irrevocable at the Closing Time, and shall remain irrevocable for the period of time specified on the Tender Form.

Form and Content (Hard Copy Delivery Method)

10.3 If the Bidder has delivered its Tender using the Hard Copy Delivery Method, then any notice of withdrawal must:

(a) be in writing;

(b) be clearly identified with
  (i) the heading "Withdrawal of Tender",
  (ii) the full legal name of the Bidder,
  (iii) and the Project Name and, or Project Number as specified in SCT2;
(c) contain a clear statement that the Tender is withdrawn, and
(d) be signed by an Authorized Representative on behalf of the Bidder, and delivered to and received at the Closing Location before the Closing Time using the Hard Copy Delivery Method.

Withdrawals by Letter (Hard Copy Delivery Method)

10.4 If the Bidder has delivered its Tender using the Hard Copy Delivery Method, then the notice of withdrawal may be delivered by hand or courier, in which case, such notice of withdrawal must be delivered to and received at the Closing Location before Closing Time enclosed in an envelope, that has clearly and legibly identified on its face,
(a) the heading "Withdrawal of Tender",
(b) the full legal name of the Bidder, and
(c) the Project Name and, or the Project Number, as specified in SCT2.

Withdrawals by Facsimile (Hard Copy Delivery Method)

10.5 If the Bidder has delivered its Tender using the Hard Copy Delivery Method, then the notice of withdrawal may be delivered by facsimile, in which case, such notice of withdrawal must be delivered to the facsimile number specified in the Invitation to Tender - Supplemental Conditions of Tender as the facsimile number for withdrawals, on or before the Closing Date and before Closing Time, and must have clearly and legibly identified on the first page of the facsimile,

(a) the heading "Withdrawal of Tender",

(b) the full legal name of the Bidder, and

(c) the Project Name and, or the Project Number, as specified in SCT2.

10.6 (a) The Bidder's notice of withdrawal shall be considered to have been delivered on or after the Closing Time, and shall not be considered in any way whatsoever, if the transmission of the notice of withdrawal by facsimile begins before the Closing Time and is completed on or after the Closing Time.

(b) The Ministry does not in any way whatsoever guarantee, and makes no representation or warranty whatsoever, as to the confidentiality of any notice of withdrawal delivered by facsimile.

Form and Content (BC Bid eService Delivery Method)

10.7 If the Bidder delivers its Tender using the BC Bid eService Delivery Method, then any notice of withdrawal must be,

(a) in writing, in accordance with the withdraw option provided by the BC Bid eService, and

(b) delivered to and received by the BC Bid eService in accordance with these Conditions of Tender, including for greater clarity, the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions, on or before the Closing Date and before the Closing Time.

10.8 Any notice of withdrawal shall be considered to have been delivered on or after the Closing Time and shall not be considered, if the transmission of such notice using the BC Bid eService Delivery

Method begins before the Closing Time and is completed on or after the Closing Time.

CT11 DELIVERY AND RECEIPT

11.1 The Ministry assumes no risk, makes no guarantee, warranty or representation whatsoever, and shall have no responsibility or liability, including in contract or in tort, whatsoever, for or in connection with,

(a) the timely delivery of any information or documentation, including without limitation, these Conditions of Tender, or any and all Addenda, whether by BC Bid eService, by mail, by courier, by hand, by facsimile, or otherwise, in connection with this Tender Call,

(b) the timely receipt of any Tenders, Revisions, notice of withdrawals, or any other information or documentation from any Bidder or any person, or

(c) the working order, functioning or malfunctioning, of facsimile transmission equipment or electronic information system, including without limitation, BC Bid eService.

11.2 Any and all Addenda, and any other documentation delivered by or on behalf of the Ministry shall be conclusively deemed validly delivered to and received by the intended recipient, including any Bidder, at the time that such Addendum or documentation as the case may be, is issued

(a) by facsimile transmission to the facsimile number designated by the Bidder as the sole facsimile number for receipt of information in connection with this Tender Call, or

(b) in electronic form to the email address designated by the Bidder as the sole email address for receipt of information in connection with this Tender Call.

CT12 OPENING OF TENDERS

12.1 At the Tender Opening, subject to CT3.12,

(a) the Tender Envelopes and the Revisions delivered at the Closing Location before Closing Time using the Hard Copy Delivery Method shall be opened, and

(b) the Tender Forms and Tender Envelopes, or, if the Bidder has delivered replacement amended Tender Forms and replacement amended Tender Envelopes for the purpose of Revision of its Tender, then only such replacement amended Tender Forms and replacement amended Tender Envelopes, delivered to and received by the BC Bid eService before the Closing Time using the BC Bid eService Delivery Method, in accordance with these Conditions of Tender, including for greater clarity, the BC Bid eService Terms and Conditions and the BC Bid Supplier Terms and Conditions, shall be announced, and

the amounts stated on each such Tender Form, or replacement amended Tender Form, and in any and all Revisions delivered using the Hard Copy Delivery Method, as the Total Tender Cost, shall be read out.

12.2 The amount stated in connection with each Tender as the Total Tender Cost and read out at the Tender Opening is unverified and shall not constitute the Total Tender Cost, but is subject to review, calculation, verification and adjustment, by the Ministry in accordance with these Conditions of Tender.

CT13 EVALUATION OF TENDERS

13.1 Except as expressly set out in these Conditions of Tender, after the Closing Time, no Bidder shall be permitted to supplement or clarify any information provided in or omitted from any Tender.

Disqualification

13.2 Any Tender, including for greater clarity, any and all Revisions, which, in the sole discretion, of the Ministry:

- **(a)** is ambiguous or unclear as to meaning or intent;
- **(b)** is incomplete, conditional, or contains a qualifier;
- **(c)** fails to comply with any of the mandatory requirements of the Conditions of Tender;
- **(d)** contains any alteration to the information provided by the Ministry; or
- **(e)** otherwise fails to comply sufficiently with the Conditions of Tender to be considered a valid Tender

is subject to Disqualification and may be disqualified by the Ministry, in its sole discretion.

If a Tender is subject to Disqualification due to any one or more of the foregoing defects, which, in the sole discretion of the Ministry, is not material, then the Ministry may, in its sole discretion, waive the defect or defects, as the case may be, and not disqualify the Tender.

13.3 Without limiting the generality of CT13.2, any Revision which, in the sole discretion, of the Ministry contains one or more of the defects set out in CT13.2, is subject to Disqualification and may be disqualified by the Ministry, in its sole discretion. If such Revision is disqualified, then the Ministry may, subject to CT 13.2, continue with evaluation of the Tender and any other Revisions, in connection with which the disqualified Revision was delivered.

13.4 If a Revision is subject to Disqualification due to any one or more of the defects referenced in CT13.3, which, in the sole discretion of the Ministry, is not material, then the Ministry may, in its sole discretion waive the defect or defects, as the case may be, and not disqualify the Revision, but include the Revision in connection with the evaluation of the Tender of which such Revision forms a part.

Bid Security

13.5 If a Tender is subject to Disqualification due to the Bid Security containing any one or more of the defects listed in CT13.2, which in the sole discretion of the Ministry, is not material, then the Ministry may, in its sole discretion, deliver written notice to the Bidder requiring the Bidder that delivered the subject Bid Security to remedy the defect or defects, as the case may be, and to deliver to the Closing Location by not later than 2 business days after the date of the Ministry's notification replacement Bid Security with the subject defect or defects remedied. If the Bidder fails to so deliver originals of the replacement Bid Security, the Ministry may, in its sole discretion, disqualify the Bidder's Tender.

Determination of Tender Price

13.6 The Tenders that, in the sole discretion of the Ministry, comply with the Conditions of Tender shall be evaluated on the basis of the Total Tender Costs calculated by the Ministry in accordance with the following:

- **(a)** adjustments to the Unit Prices, if the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy, the Tendered Site Occupancy Days, and the Extended Amounts, including Tendered Site Occupancy Cost, if any, shown on the Bidder's Schedule of Approximate Quantities and Unit Prices shall be made by the Ministry in accordance with the Revision(s) that have not been disqualified;

(b) if any Unit Price provided by the Bidder and its corresponding Extended Amount are at variance, the Unit Price shall be considered correct and the Ministry shall recalculate the Extended Amount by multiplying the Approximate Quantity by the Unit Price provided by the Bidder;

(c) if the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy, and any Tendered Site Occupancy Days provided by the Bidder and its corresponding Tendered Site Occupancy Cost are at variance, the Tendered Site Occupancy Days shall be considered correct and the Ministry shall recalculate the Tendered Site Occupancy Cost by multiplying the Tendered Site Occupancy Days by the Daily Site Occupancy Cost;

(d) if the sum of all Extended Amounts, including if the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy, the Tendered Site Occupancy Cost, and the amount stated as the Total Tender Cost on the Tender Form are at variance, then the amount stated as the Total Tender Cost on the Tender Form shall be deemed to be adjusted to be the sum of the Extended Amounts, including the Tendered Site Occupancy Cost, if any, as calculated by the Ministry; and

(e) if the sum of all Extended Amounts, including if the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy, the Tendered Site Occupancy Cost, as calculated by the Ministry, is at variance with the amount stated as the Total Tender Cost on the Tender Form, then the sum of the Extended Amounts, including the Tendered Site Occupancy Cost, if any, as calculated by the Ministry, shall be deemed to be the Total Tender Cost and the amount stated as the Total Tender Cost on the Tender Form shall be deemed to be adjusted to be the sum of the Extended Amounts, including the Tendered Site Occupancy Cost, if any, as calculated by the Ministry;

(f) the sum of all Extended Amounts, including if the Schedule of Approximate Quantities and Unit Prices contains a Part B for Site Occupancy, the Tendered Site Occupancy Cost, as calculated by the Ministry, shall be deemed to be the Bidder's Total Tender Cost.

13.7 If the Total Tender Cost of each of two or more Tenders, as calculated by the Ministry, is the same figure and if the Ministry decides to accept any Tender and award the Contract, then the Ministry shall determine the Bidder to which an Award letter will be delivered by applying a random method chosen in the Ministry's sole discretion, which may consist of, without limitation, a coin toss or the drawing of one of the Bidder's names out of a box.

CT14 BIDDER'S CAPACITY TO PERFORM

14.1 The Ministry may, at any time and from time to time, after Closing Time, require any Bidder to satisfy the Ministry, in its sole discretion, that the Bidder has the necessary qualifications, equipment, material, and resources available to carry out the Work in a safe, competent manner, within the time limits, and any other requirements specified in the Tender Document Package, including by delivering information to the Ministry in writing which information may include any or all of the following:

(a) evidence that the Bidder is financially, or otherwise capable of performing and completing the Work or the Contract, including without limitation, an agreement to bond, consent of surety, or undertaking to provide requisite insurance;

(b) evidence that the Bidder has successfully carried out and completed works of a similar nature or is otherwise fully capable of performing the Work;

(c) a list of equipment, and its mechanical condition, that the Bidder is prepared to use on the Work;

(d) evidence that the personnel available to the Bidder have professional standing, technical and trade qualifications and licenses necessary to perform the Work;

(e) a detailed Project or Construction Schedule meeting all requirements of the Contract.

14.2 Any Bidder requested to provide such information shall comply with the request by not later than ten (10) days of the date on which the request was made or within such earlier time period, as specified by the Ministry. The Ministry reserves the right to reject the Tender of any Bidder that does not provide information to the satisfaction of the Ministry, in its sole and absolute discretion, in response to any such request.

CT15 RIGHT NOT TO AWARD

15.1 The Ministry reserves the right, in its sole and absolute discretion, to disqualify any or all Tenders, to cancel this Tender Call, to reject any or all Tenders, and to re-tender the same or similar Work at any time. The lowest or any Tender shall not necessarily be accepted.

CT16 ACCEPTANCE

16.1 An Award letter is the only form of acceptance that shall be binding on the Ministry.

CT17 PRIOR TO COMMENCEMENT OF WORK

17.1 If the Ministry delivers an Award letter to the Bidder,

(a) the Bidder shall on the earlier of:

(i) fourteen (14) days from the date shown of the Award letter; and

(ii) three (3) days before commencement of the Work on the Site,

obtain and deliver to the Ministry, the Performance Security, evidence of compliance with the Schedule of the Contract entitled the "Schedule of Insurance", and the Bidder's valid Workers' Compensation Board registration number, and

(b) the Bidder shall on the earlier of:

(i) fourteen (14) days from the date shown on the Ministry cover letter delivering the Contract to the Bidder; and

(ii) three (3) days before commencement of the Work on the Site,

deliver to the Ministry the Contract duly executed by an Authorized Representative, and commence to diligently and promptly fulfill its obligations under the Contract.

CT18 DEFAULT

Event of Default

18.1 Without limiting any and all rights of the Ministry to make demand on the Bid Security, if the Bidder does not comply with the requirements of **CT17**, then the Ministry may make demand on the Bid Security.

18.2 The rights and remedies of the Ministry under and in connection with this Tender Call are not limited to the Ministry's right to make demand on the Bid Security, and the right to make such demand is cumulative and in addition to every other right and remedy available to the Ministry under and in connection with this Tender Call, at law, and in equity. The exercise by the Ministry of any such right or remedy shall not preclude the simultaneous or later exercise of any other such right or remedy.

Demand on Bid Security

18.3 A demand on the Bid Security shall be the lesser of:

(a) the difference between the Tender Price of the Bidder that has been awarded the Contract by the Ministry, as calculated by the Ministry, and the amount for which the Ministry contracts with another party to perform the Work or substantially the same Work; and

(b) the full amount of the Bid Security.

CT19 DISPUTE RESOLUTION

19.1 In the event of a dispute arising out of this Tender Call:

(a) the Bidder shall, within fourteen (14) days of any issue in dispute first coming to the attention of the Bidder, deliver written notice to the Contact Person of such dispute arising out of this Tender Call; and

(b) all such disputes not resolved through negotiation between the parties within thirty (30) days of the dispute being presented in writing to the Contact Person shall be referred to and finally resolved by binding arbitration in accordance with the *Commercial Arbitration Act*, unless the parties agree otherwise.

19.2 Notwithstanding any notice delivered under CT19.1, the Ministry may, but in no event will be obligated to, proceed with this Tender Call without prejudice to any ongoing negotiations or binding arbitration as contemplated in CT19.1

CT20 TIME LIMITATION ON CLAIMS

20.1 Any claim or cause of action a Bidder may have against the Ministry arising out of or in connection with:

(a) the Tender;

(b) the Award; or

(c) this Tender Call

shall be absolutely barred after the expiration of one (1) year commencing from the Closing Time.

CT21 LIMITATION OF DAMAGES

21.1 The Bidder agrees that if the Ministry cancels this Tender Call, disqualifies all Tenders, rejects all Tenders, or does not Award the Contract to any Bidder, then

(a) the Bidder shall not claim against the Ministry, and

(b) the Ministry shall not be liable to the Bidder or to any person,

in contract, in tort, or otherwise, for any losses, costs, damages or expenses or anything whatsoever, including without limitation, for loss of revenue, opportunity, or anticipated profit, or for costs of preparation of the Bidder's Tender.

21.2 The Bidder agrees that in circumstances not described in CT21.1,

(a) the Bidder shall not claim against the Ministry, and

(b) the Ministry shall not be liable to the Bidder or to any person,

in contract, in tort, or otherwise, for any losses, costs, damages or expenses or anything whatsoever, including without limitation, for loss of revenue, opportunity, or anticipated profit, in excess of an amount equivalent to the actual and reasonable costs directly incurred by the Bidder to prepare the Bidder's Tender.

CT22 INTERPRETATION AND DISCRETION

22.1 The Ministry shall not be bound by industry custom and practice in the application or interpretation of these Conditions of Tender, the exercise of its discretion, or in the determination of materiality or compliance.

CT23 APPROPRIATION

23.1 Notwithstanding any other term of these Conditions of Tender, any Award of the Contract, and any financial obligations of the Ministry pursuant to these Conditions of Tender or the Contract shall be subject to:

(a) there being sufficient monies available in an Appropriation to enable the Ministry in any fiscal year or part thereof when any payment of money by the Ministry to the Bidder falls due under the Contract, to make that payment; and

(b) the Treasury Board, as defined in the Financial Administration Act, having not controlled or limited expenditure under any Appropriation contemplated to or referred to in the Contract.

CT24 CONFIDENTIALITY

24.1 All documents and records in the custody or under the control of the Ministry, including, without limitation, the Tender, any Revision, and all other information delivered by the Bidder pursuant to these Conditions of Tender shall become the property of the Ministry, and the Ministry may use any pricing information provided by the Bidder for the purpose of or in connection with preparing the analysis of the Work and for the purpose of or in connection with cost estimating for other projects.

24.2 Except as otherwise provided or otherwise contemplated in these Conditions of Tender, the Ministry shall treat as confidential and shall not, without the prior written consent of the Bidder, publish, or disclose, or permit to be published or disclosed, the Tender, any Revision, any documents, records or other information delivered by the Bidder pursuant to these Conditions of Tender, except insofar as such publication or disclosure is required by law, including without limitation the *Freedom of Information and Protection of Privacy Act*, or is necessary to enable the Ministry to fulfill any obligations that the Ministry may have under or in connection with this Tender Call.

CT25 GENERAL

25.1 The headings and captions in these Conditions of Tender are inserted for convenience only and do not form a part of these Conditions of Tender and in no way define, limit, alter or enlarge the scope or meaning of any term of these Conditions of Tender.

25.2 If any provision of these Conditions of Tender or the application thereof to any person or circumstance is invalid or unenforceable to any extent, the remainder of these Conditions of Tender and the application of such provision to any other person or circumstance will not be affected or impaired thereby and shall be valid and enforceable to the extent permitted by law.

25.3 In these Conditions of Tender, the words "including" and "includes", when following any general term or statement, are not to be construed as limiting the general term or statement to the specific items or matters set forth or to similar items or matters, but rather as permitting the general term or statement to refer to all other items or matters that could reasonably fall within the broadest possible scope of the general term or statement.

C-5 Build BC Act Appendix BC21

APPENDIX

BC21

MINISTRY OF TRANSPORTATION

CONSTRUCTION PROJECTS

BUILD BC ACT (BC 21)
TENDER AND CONTRACT LANGUAGE FOR
MINISTRY OF TRANSPORTATION
CONSTRUCTION PROJECTS

NOTICE TO BIDDERS (INVITATION TO TENDER)

All work on this project must address Provincial BC 21 social and economic objectives as laid out in Section 2 of the Build BC Act.

Any Bidder (including prime Contractors, Subcontractors, and workers on the Site) represents and warrants, by submission of a Tender, that they have understood and will comply with the contract conditions established to achieve BC 21 social and economic objectives and will cooperate with Ministry of Transportation in all matters related to achieving BC 21 social and economic objectives.

PRE-BIDDERS CONFERENCE

Where appropriate a pre bidders conference or regional seminar is to be scheduled to explain to Bidders the intent of this language.

CONDITIONS OF TENDER/INSTRUCTION TO BIDDERS

BC 21 Social and Economic Objectives

The Bidder (including prime Contractors, Subcontractors, and workers on the Site) represents and warrants by submission of a Tender that the Bidder has read, understands, and agrees to comply with the contract conditions designed to achieve BC 21 social and economic objectives as laid out in Section 2 of the Build BC Act, and will cooperate with the Ministry of Transportation in all matters related to achieving BC 21 objectives.

CONSTRUCTION AGREEMENT CONDITIONS

Promotion of BC 21 Social and Economic Objectives

1.00 Definitions

In this agreement:

(a) "Contractor" means the person, firm or corporation identified as such in the Contract Document Package;

(b) "Subcontractor" means a person, firm or corporation, other than the Contractor, having a contract to perform work on the Project. Includes, inter alia, all Subcontractors.

2.00 Preamble

2.01 Ministry of Transportation is charged with implementing the BC 21 social and economic objectives as laid out in Section 2 of the Build BC Act:

Purpose

2.02 The purpose of this Act is to facilitate the expansion and diversification of the British Columbia economy by:

(a) coordinating the Government's activities to achieve overall economic development and job creation goals;

(b) ensuring that all regions of the Province benefit from economic expansion and diversification;

(c) encouraging public and private sector investment and job creation activities in an innovative manner;

(d) promoting training and investment in people as a significant component of public sector investment activity, and

(e) targeting activities under this Act toward traditionally disadvantaged individuals and groups.

In order to promote Industry support for the objectives, as per paragraph 2.01, the Ministry of Transportation has initiated the program in a manner that allows latitude to the Contractor and Subcontractors in their selection of innovative measures to be taken towards achievement of the objectives.

3.00 Requirements

3.01 The Contractor and Subcontractors, where practicable, shall endeavour to:

(a) employ as many local workers;

(b) employ as much local equipment;

(c) utilize B.C. manufactured, competitive, materials;

(d) assist workers in the development of job and construction skills;

(e) address the principles of "Employment Equity" and "Diversity" [as defined in the Glossary of Terms, paragraphs (a), (b), and (c)], on the job site; and

(f) initiate other measures, which the Contractor and Subcontractors may develop, consistent with these objectives.

4.00 Reporting

4.01 The Contractor will prepare and submit to the Ministry of Transportation Representative such reports as the Ministry of Transportation may request, describing and quantitatively detailing the measures the Contractor and Subcontractors has taken in working towards the objectives as stipulated in paragraph 3.01.

Details of the report requirements will be provided during the contract.

Glossary of Terms

(a) "Employment Equity" means a strategy or program to develop a workforce that is, at all levels, representative of the diverse population and in which no one is denied an opportunity for employment or advancement for reasons other than ability to do the job. Specifically, for the purposes of implementing Section 2, of the Build BC Act described in paragraph 2.01, "Employment Equity" refers to strategies to ensure that four "designated groups" of traditionally disadvantaged individuals, consistently under-represented or under employed in the workplace, have fair access to employment and advancement opportunities. Employment Equity includes addressing issues of accommodation (ensuring reasonable working conditions for designated group members) or "harassment", as defined in (d), on the job site. The four designated groups are as defined in (b).

(b) The four "designated groups" are:

- women;
- aboriginal persons: For the purposes of Employment Equity an aboriginal person is considered to be a person of Indian, Metis, or Inuit ancestry. Persons of Indian ancestry include all such persons whether they are deemed to be status or non-status under the terms of the Federal Indian Act;
- visible minorities: For the purposes of Employment Equity a visible minority is considered to be a person other than an aboriginal person who, because of race or colour, is in a visible minority in Canada; and,
- persons with disabilities: For the purposes of Employment Equity a person with a disability is considered to be someone who experiences specific serious barriers to employment, who requires accommodation, or who believes that a potential employer would likely consider them to be disadvantaged by reason of any persistent physical, mental, psychiatric, learning or sensory impairment. Disabilities that are not discernible and cause no work-related problems are not included in the definitions of persons with disabilities for Employment Equity purposes.

(c) "Diversity" means the unique and identifiable characteristics which all people possess and which distinguish them as individuals and identify the groups they belong to. This includes, but is not limited to, the concepts of gender, race, ethnicity, ability, disability, class, sexual orientation, religion, language, beliefs, norms, traditions, and rules.

(d) "Harassment" means any unwelcome physical, visual, or verbal conduct. It may include verbal or practical jokes, insults, threats, personal comments or innuendo. It may take the form of posters, pictures or graffiti. It may involve touching, stroking, pushing, pinching or any unwelcome physical contact, including physical assault. Unwelcome sexual acts, comments or propositions are harassment. Harassment may be racially based. Workplace harassment may occur in offices, buildings, company cafeterias, washrooms, worksites, locker rooms, vehicles, or any other location where work is conducted. Harassment which occurs outside the workplace but which has repercussions in the work environment, may also be defined as workplace harassment.

Appendix 'A'
Employment Equity

The Government's intent is to allow Contractor's and their supporting associations, councils, or unions (industry and labour) the greatest latitude to develop Employment Equity Policies and Programs. Each industry sub-sector, Project, Contractor, Labour Force, and job site has unique needs. Given these unique requirements it would not be appropriate to restrict a Contractor or Subcontractors to a generic employment equity model. Further, the industry has developed its own employment equity policies and programs. Flexibility in the contracting process will allow industry to adapt these existing programs and develop new innovative approaches to achieve Employment Equity Objectives on specific Projects.

Accordingly, the intent of this Appendix is two fold:

(1) define broad objectives the Contractor should address in developing an Employment Equity Program (I. Objectives); and

(2) provide a general orientation guide to Employment Equity and outline the resources available to the Contractor to develop a program (II. Guide and Resources)

I. OBJECTIVES:

Section 19.1(1) of the B.C. Human Rights Act identifies the essential elements of an Employment Equity Program:

- the program's objective must be "the amelioration of conditions of disadvantaged individuals or groups"; and
- the program must achieve or be reasonably likely to achieve that objective.

For the purposes of construction on Provincial Government projects "the amelioration of conditions of disadvantaged individuals or groups" can be achieved by addressing, at a minimum, the following three objectives:

(1) working to remove systemic barriers for designating groups to obtain work in the construction industry;

(2) maximizing the possibility that members of the designated groups will remain in the construction industry; and

(3) identifying special opportunities to encourage designated group members to enter into the construction industry's training and apprenticeship stream.

The entry point to the workforce where most tradespeople begin their construction career is the training and apprenticeship process. The process is a key point for increasing the number of qualified designated group members in the construction workforce.

II. GENERAL EMPLOYMENT EQUITY GUIDE AND RESOURCES:

Suggested resources include:

- Building for Equality - Practical Tips on Equitable Employment Procedures, Canadian Construction Association
- Tomorrow's Builders: An Employment Equity guide for the construction industry, Canadian Construction Association
- Reference material compiled by the Ministry of Women's Equality